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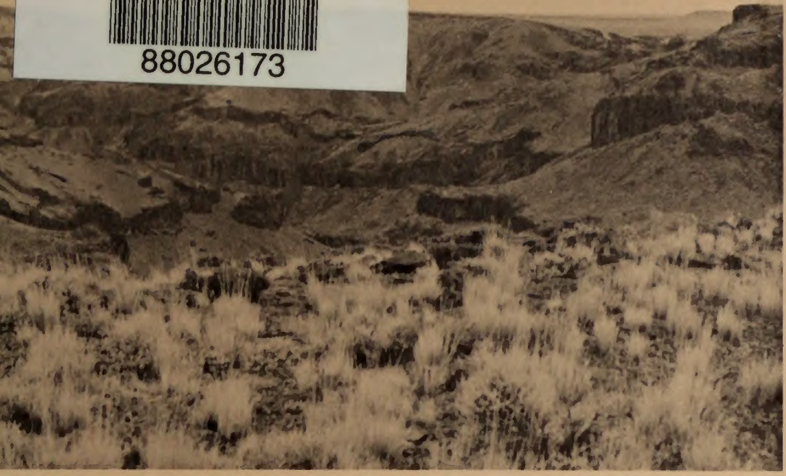

# Bruneau - Kuna Grazing Environmental Impact Statement Draft

U.S. DEPARTMENT OF INTERIOR
Bureau of Land Management
Boise District
Idaho
1982

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# DRAFT

# BRUNEAU-KUNA GRAZING

# ENVIRONMENTAL IMPACT STATEMENT

Prepared By

Bureau of Land Management
Department of the Interior

Idaho State Director, Bureau of Land Management

March 3, 1849

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Boise District Office
3948 Development Avenue
Boise, Idaho 83705

IN REPLY REFER TO

8500

We have forwarded for your review and comment the Draft Bruneau-Kuna Grazing EIS. This draft has been prepared by a team of resource specialists from the Bureau of Land Management's Boise District to assess the impacts of livestock grazing within the Bruneau Resource Area and the southern portion of the Owyhee Resource Area.

Please keep your copy of the draft because only an abbreviated final may be printed. The Final Bruneau-Kuna Grazing EIS will be prepared using the comments received through the public review process on the draft document. The final document may only contain a record of public participation and consultation, and an addendum section recording changes made in the draft.

Two public hearings will be scheduled to receive oral and written testimony on this draft document. The hearings will be held on separate days in June or July, 1982. Information regarding the specific location and time of each hearing will be published at a later date.

Written comments are invited. They must be received on or before July 19, 1982 to be considered in the preparation of the Final EIS. Oral and written comments will receive equal consideration in the final document. Written comments are to be submitted to:

Bureau of Land Management
Bruneau-Kuna Grazing EIS
Boise District Office
3948 Development Avenue
Boise, Idaho 83705

We look forward to your comments and thank you for past and future assistance in our effort to manage public lands in the best interest of all concerned. If you have any questions or need further information please feel free to call me or Ted Milesnick, EIS Team Leader, at (208) 334-1582.

Sincerely yours,

Martin Zimmer

Martin J. Zimmer
District Manager

# BRUNEAU-KUNA
# GRAZING ENVIRONMENTAL IMPACT STATEMENT

(X) Draft ( ) Final Environmental Impact Statement

1. Type of Action: (X) Administrative ( ) Legislative

2. Responsible Agency: U.S. Department of the Interior, Bureau of Land Management.

3. Abstract:

The Bureau of Land Management, Boise District proposes to implement an improved rangeland management program on 2,379,014 acres of public land in Ada, Elmore and Owyhee Counties of southwest Idaho and 8,219 acres of public land in northcentral Elko County, Nevada. The actions proposed would improve the vegetative condition in the Bruneau Resource Area and the southern portion of the Owyhee Resource Area. The area contains 49 allotments. Intensive management practices would be applied to 25 allotments while 24 allotments would be managed less intensively. The proposed action would result in an initial AUM decline of 15% below the current active grazing preference; however, this reduction is still 7% above the past 5-year licensed use. Total initial allocation for livestock would be 202,275 AUM's. It is anticipated that livestock use would increase to 269,785 AUM's in 20 years because of improved vegetative conditions, increased water developments and sagebrush removal. A total of 2,333 competitive AUM's would be allocated to wildlife. Grazing systems which recognize physiological requirements of key grasses, forbs, and shrubs as well as the desired cover requirements for deer, antelope and sage grouse would be implemented. Several cultural sites as well as sensitive riparian and fisheries areas would be excluded from grazing.

4. Alternatives Analysed:

   a) Continue Present Management
   b) No Livestock Grazing
   c) Increased Livestock Use
   d) Reduced Livestock Use

5. Comments Must Be Received By: July 19, 1982.

6. Send comments to:

   Martin J. Zimmer, District Manager
   Bureau of Land Management
   Boise District Office
   3948 Development Avenue
   Boise, Idaho 83705

7. Further Information: Contact Ted Milesnick, EIS team leader at (208) 334-1582.

# SUMMARY

The Bureau of Land Management, Boise District, is proposing to implement an improved rangeland management program on 2,379,014 acres of public land located primarily in southwest Idaho. The purpose of the proposal is to improve the soil, water and vegetative resources within the area. This would be accomplished by properly allocating the vegetative resource between livestock, wildlife, and non-consumptive uses. Improved management of existing livestock use coupled with range improvement projects (i.e., fences, water development and brush control) would also aid in the attainment of objectives.

The proposed management was developed from draft land use plans for the Bruneau Resource Area and the southern portion of the Owyhee Resource Area. These plans will be finalized following completion of this EIS. Alternatives to the proposed action include: 1) Continue Present Management, 2) No Livestock Grazing, 3) Increased Livestock Use, and 4) Reduced Livestock Use.

Major issues that were identified during the scoping process that will be resolved during this land use plan/EIS process include: 1) what is the appropriate level of livestock grazing on the area, 2) should none, all or a portion of a pipeline proposed on the Jacks Creek Plateau be constructed, and 3) from an economic standpoint, what is the optimum balance between livestock use and other consumptive or non-consumptive uses.

## PROPOSED ACTION

The proposed action would allocate vegetation for consumptive use by livestock and wildlife on 49 allotments. Vegetation would be allocated to satisfy reasonable wildlife numbers determined during the BLM planning process. The initial allocation to livestock would be 202,275 Animal Unit Months (AUM's). This is 7% above the past five-year licensed use but 15% below the current active grazing preference. Wildlife would be allocated 2,333 AUM's.

Under the proposed action, two levels of grazing management are proposed. Intensive management would be applied to 25 allotments and less intensive management would be applied to 24 allotments. In the intensive management category, allotment management plans (AMP's) incorporating specific grazing systems and multiple use objectives would be developed following completion of this EIS and the land use plans. AMP's would not be developed in the less intensive category. However, season of use would be established and grazing systems could be developed.

The proposal includes measures to improve or protect fisheries habitat, wildlife habitat, cultural resources and other resource values. Approximately 153 miles of fisheries habitat would be managed with the primary management objective being to improve riparian and fisheries habitat condition. An additional 125 miles of canyonland would be reserved for bighorn sheep, river otter, mountain quail and other riparian associated wildlife (including fisheries habitat).

Implementation of the proposed action would require installation of the following range improvements and land treatment projects:

250 miles of fence
125 spring developments
235 reservoirs
Six wells
Eight water catchments
75 cattleguards
105 miles of pipeline
234,000 acres of brush control
42,300 acres of brush control & seeding

The proposed action includes development of 19 miles of pipeline on the plateau between Little Jacks and Big Jacks Creek.

## ALTERNATIVE #1 - CONTINUE PRESENT MANAGEMENT

Under this alternative, the current level and type of grazing use would continue. The five-year average licensed use of 189,800 AUMs is assumed to continue. A limited amount of project development would be done.

## ALTERNATIVE #2 - NO LIVESTOCK GRAZING

All livestock grazing on public lands administered by the BLM would be terminated. All vegetative production would be available for wildlife and non-consumptive uses. No new project development for livestock management would be constructed. Existing fences would be removed.

## ALTERNATIVE #3 - INCREASED LIVESTOCK USE

This alternative addresses additional range improvements and increased forage allocations that could occur if Congress does not designate any wilderness study areas within the EIS area as wilderness. These projects were not included in the proposed action, because of conflicts with wilderness recommendations in the land use plan. The forage allocation would be 1,833 AUM's above that described in the proposed action, because of increased water development. The initial allocation for livestock would be 204,108 AUM's and the allocation for wildlife would be 2,333 AUM's. Under this alternative, an additional 22 miles of pipeline on the Jacks Creek plateau and an additional 1,600 acres of brush control is proposed. Other management proposals would be the same as those described in the proposed action.

## ALTERNATIVE #4 - REDUCED LIVESTOCK USE

This alternative addresses a lower level of livestock use, later livestock turn out dates on 17 allotments, and assumes a lower level of funding than does the proposed action. The funding level is based on the amount of range improvement money anticipated to be returned to the study area over a ten year period.

Livestock would be allocated 175,922 AUM s and wildlife would be allocated 2,333 AUM's. Project development would be the same as that described in the proposed action except that none of the pipeline proposed on the Jacks Creek plateau would be constructed and 81,600 acresof brush control that was proposed in the project action would not be completed.

## ENVIRONMENTAL CONSEQUENCES

### Proposed Action

The proposed action would improve range condition. The range condition class would improve on approximately 70% of the area. Plant vigor and production would improve on the remainder of the area; but because of low site productivity, lack of desirable plant species, and low precipitation levels, these areas would remain in the poor range condition class. The 278 miles of riparian area identified for grazing exclusion or special fisheries habitat management would show improvement over 20 years. The remainder of the riparian areas would continue to receive heavy livestock use and would remain in unsatisfactory condition. Soil stability on high and criticl erosion hazard areas would be maintained. Stream bank erosion would increase on streams not fenced or managed primarily for fisheries habitat improvement.

Forage production is expected to increase from improved grazing management increased water development and land treatment projects. In 20 years, livestock use would increase from the current five year average use of 189,800 AUM's to 269,785 AUM's.

A gradual improvement in mule deer diet would occur and mule deer habitat objectives would be met. Antelope, however, would remain at current population levels. The proposal would generally be beneficial to bighorn sheep even though some adverse impacts occur from the proposed Jacks Creek pipeline. Sage grouse population levels would remain unchanged because of forb removal by livestock during the spring and summer. Fisheries and riparian associated wildlife would be benefitted on those areas showing riparian habitat improvement. In years of below normal vegetative production, livestock use may adversely impact the prey base and birds within the Snake River Birds of Prey Area.

Visual resources would be adversely impacted by some of the proposed project development and land treatments. Wilderness values would be maintained on most wilderness study areas. However, increased livestock use would adversely impact the ecological values of some areas currently in good or excellent ecological condition. Recreation quality and uses within the area would be enhanced.

Ranch income changes over the long term would amount to +$683,700. The net present worth of the proposed action would be +$503,700. In 20 years, regional employment would increase by 132 jobs and the ranching community would have a strengthened feeling of social well being.

## Alternative #1 - Continue Present Management

Under this alternative, vegetative response would be variable. On those allotments where the range inventory indicated excess forage, vegetative conditions would improve. On allotments where the inventory indicated forage shortages, range condition would decline. Consequently, overall condition and forage production would show little change. Similarily, little overall change in wildlife habitat conditions would occur. Conditions are generally unsatisfactory on much of the area. Maintaining current levels of grazing use in the birds-of-prey area would reduce potential adverse impacts identified for the proposed action. Fisheries habitat conditions would decline because of continued concentration of livestock on riparian areas.

Although recreation use would increase due to current trends the quality of hunting and fishing would decline. This alternative would have fewer adverse impacts to wilderness values than the proposed action. Most of the areas in good ecological condition would experience reduced livestock use, because of range condition improvement in affected allotments.

Ranch income would not change over the 20 year period. The net present worth of this alternative would be -$715,900.

## Alternative #2 - No Livestock Grazing

Implementation of the no livestock grazing alternative would result in improved vegetative and watershed conditions. However, the absence of sagebrush removal projects would limit vegetative improvement on certain range sites. Wildlife and fisheries habitat conditions and population levels would respond more favorably than in any other alternative. Recreation, visual resources, and wilderness values would also show significant enhancement. Elimination of grazing, however, would have considerable adverse impacts to livestock operators. Ranch income changes would amount to -$1,543,300. The net present worth of this alternative would be -$11,715,900. The ranching community would experience a reduced feeling of social well being.

## Alternative #3 - Increased Livestock Use

Impacts of this alternative would be similar to those described for the proposed action, when the entire study area is considered. However, there would be significant differences in the area of the Jacks Creek pipeline and on those areas with increased sagebrush treatment. Development of 19 miles of spur lines to the 22 mile portion of the Jacks Creek pipeline included in the proposed action would open up additional areas for livestock grazing. This would create reductions in vegetative vigor and localized concentration areas near water sources. However, the overall condition class of the area would remain unchanged. This increased livestock use would adversely impact bighorn sheep, visual resources and wilderness values. It is anticipated that the Jacks Creek bighorn sheep herd would be lost because of competition with livestock.

The net present worth of this alternative would be +$625,900. Ranchers income changes would be +$725,400.

## Alternative #4 - Reduced Livestock Use

Later livestock turnout dates would benefit most resources on affected allotments. Antelope and sage grouse populations would increase because of reduced competition on spring ranges. Fisheries and riparian habitat conditions would improve over levels described in the proposed action, because of decreased livestock use and shortened seasons of use. Reduced sagebrush treatments in several allotments would reduce the amount of vegetative improvement and forage production from that which would be achieved in the proposed action. By not constructing any of the Jacks Creek pipeline, pristine vegetation, wildlife habitat, visual quality and wilderness values would be maintained on the Jacks Creek plateau. However, without the pipeline, the options for implementing future grazing systems or Allotment Management Plans on the two affected allotments would be reduced. This could result in unsatisfactory vegetative response on the remainder of these allotments.

Ranch income changes would be +$476,800, and the net present worth of this alternative would be +$51,200.

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# CHAPTER 1
# PURPOSE AND NEED

The Bureau of Land Management is proposing to implement an improved rangeland management program on 2,379,014 acres of BLM land within the Bruneau Resource Area and the southern portion of the Owyhee Resource Area, Boise District. The lands under consideration are located primarily in southwest Idaho and include portions of Ada, Elmore, and Owyhee Counties (Map 1-1). A small portion of the area is located in north-central Nevada, Elko County. The jurisdiction of lands (Map 1-2) within the area is summarized below:

| | Idaho | Nevada | Total |
|---|---|---|---|
| BLM land | 2,370,795 | 8,219 | 2,379,014 |
| State land | 225,686 | 0 | 225,686 |
| Private land | 508,759 | 410 | 509,169 |
| Total (acres) | 3,105,240 | 8,629 | 3,113,869 |

For a breakdown of land ownership within each allotment see Appendix Table A-1.

The purpose of the proposal is to maintain or improve soil, water and vegetative resources within the area. It is also intended to provide forage for livestock and wildlife using the area. The proposed action and alternatives have been developed from the multiple use recommendations found in the land use plans for the area. This Environmental Impact Statement (EIS) is being prepared between the multiple use recommendations and the final decision steps of the land use plan. The final decisions will be made after consideration of the impacts identified in this statement.

The scope of this EIS and a determination of sensitive or significant issues was determined through informal public contact and public meetings held on December 14 and 15, 1981. Based on this input, three main issues were identified. They are:

1) The appropriate level of livestock grazing on the area.

   This issue is addressed by examining the impacts of different levels of forage allocation and range improvement projects on vegetation, watershed, wildlife, wilderness values, among others.

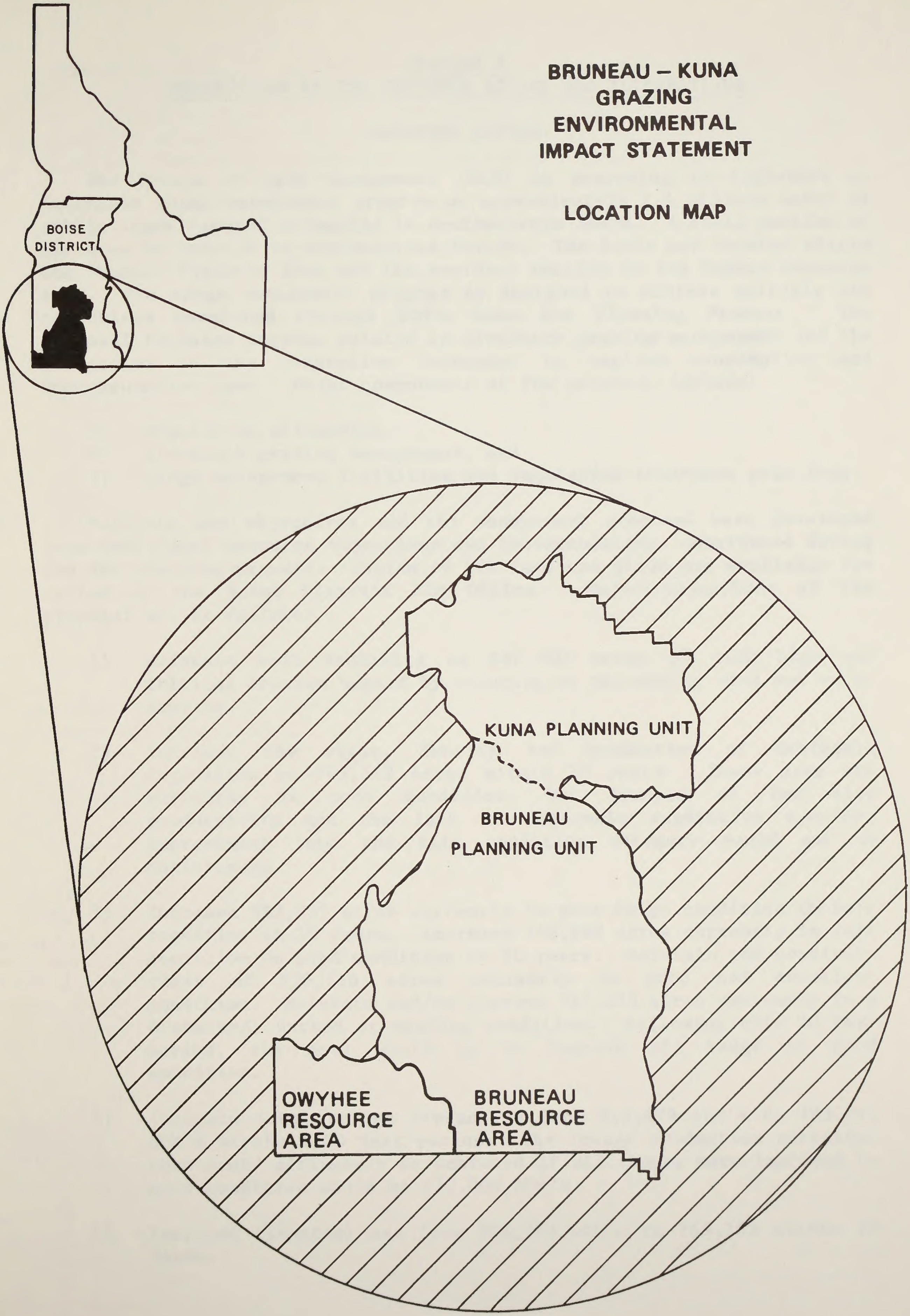
2) The Jack's Creek Pipeline.

   This pipeline proposal would provide livestock water to a large lightly grazed plateau area between Little Jacks and Big Jacks Creek. This issue is addressed by examining various levels of development of this pipeline.

3) The economic impacts of the various levels of forage allocation upon livestock operators.

This issue is addressed by examining various levels of forage allocation between competitive and noncompetitive uses.

This statement is prepared in compliance with the National Environmental Policy Act and in specific response to litigation in U.S. District Court, for the District of Columbia, entitled Natural Resources Defense Council, Inc. et. al. v. Rogers C. B. Morton et. al. Case #1983-73.



BRUNEAU – KUNA
GRAZING
ENVIRONMENTAL
IMPACT STATEMENT

LOCATION MAP

MAP 1–1

# CHAPTER 2
# DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

## PROPOSED ACTION

The Bureau of Land Management (BLM) is proposing to implement an intensive range management program on approximately 2.4 million acres of public lands located primarily in southwestern Idaho. A small portion of the area is located in northcentral Nevada. The lands are located within the Bruneau Resource Area and the southern portion of the Owyhee Resource Area. The range management program is designed to achieve multiple use objectives developed through BLM's Land Use Planning Process. The proposal includes actions related to livestock grazing management and the allocation of the vegetative resources to various consumptive and nonconsumptive uses. Major components of the proposal include:

1) vegetation allocation,
2) livestock grazing management, and
3) range management facilities and vegetative treatment practices.

Multiple use objectives and the management proposal were developed from individual resource objectives and recommendations considered during the BLM planning process. Copies of the land use plans are available for review at the Boise District BLM Office. Major objectives of the proposal are as follows:

1) Maintain soil stability on 660,000 acres of with high and critical erosion hazard by reducing or minimizing wind and water erosion.

2) Increase the vigor, density and production of desirable vegetation on 745,512 acres within 20 years. These ares are currently in poor condition, but because of low site productivity and the lack of desirable vegetative species, improvement into the fair condition category would not be anticipated.

3) Increase 532,855 acres currently in poor range condition to fair condition in 20 years. Increase 448,698 acres currently in fair condition to good condition in 20 years. Maintain the condition class of 338,716 acres currently in good and excellent condition. Maintain and/or improve 313,233 acres currently in a disturbed, burned or seeding condition. Following this 20 year period, the goal would be to improve all range to good condition.

4) Increase total forage production from 210,479 AUM's to 283,244 AUM's within a 20 year period. The forage production potential that could ultimately be achieved if all ranges were improved to good condition would be 430,000 AUM's.

5) Increase livestock use from 202,275 AUM's to 269,785 within 20 years.

6) Manage 93,500 acres of bighorn sheep habitat to provide adequate food, cover and water for 400 bighorn sheep by 1990. Population objectives within the Bruneau Resource Area are as follows: 200 bighorns on the Owyhee River, 100 bighorns in the West Fork of the Bruneau River and maintenance of the 100 bighorns on Little Jacks Creek.

7) Manage 547,200 acres of mule deer habitat (winter and spring) so there is adequate food, cover and water for 5,840 animals by 1990.

8) Manage 1,483,000 acres of mule deer habitat (summer and fall) so there is adequate food, cover and water for 3,175 animals by 1990.

9) Manage 1,452,000 acres of antelope habitat to provide sufficient forage, water, cover and space for 1,580 animals by 1990.

10) Improve 153 miles of public stream miles with poor and fair fisheries habitat condition to fair and good condition by 1990.

11) Preserve wilderness characteristics and values in areas recommended as "suitable" for wilderness (all WSAs will be managed under the Wilderness IMP until released from the wilderness review process).

### Vegetative Allocation

In order to improve vegetative condition and satisfy forage demands, the vegetative resource would be allocated among livestock, wildlife and nonconsumptive uses (watershed, plant maintenance requirements).

Allocation of 2,333 competitive livestock AUM's would be made by pasture to provide the forage needs for reasonable numbers of big game animals (antelope, deer, elk and bighorn sheep). The population management levels (reasonable numbers) were determined through public input, and from consultation with the Idaho Fish and Game Department, during the land use planning process. A total of 202,275 AUM's are being allocated for livestock use. The present active grazing preference is 238,214 AUM's. The past 5-year average licensed active use has been 189,800 AUM's. Vegetative allocation by allotment is shown in Table 2-1. In 20 years, it is anticipated that livestock use would increase to 269,785 AUM's as a result of improved range conditions, land treatment projects and water development.

A summary of the initial and projected 20 year forage allocation for the proposed action and all alternatives is shown on Table 2-2.

On the Owyhee portion of the study area, the vegetative allocation is based on 50% utilization levels of grasses because specific grazing systems incorporating periodic rest treatments have been identified. On allotments within the Bruneau Resource Area, the vegetative allocation is based on the biological limit of forage species because specific grazing systems have not been identified. The biological limit is the level or degree of grazing that can be allowed without periodic rest treatments

## Table 2-1
## Forage Allocation - Proposed Action
## (AUM's)

| Allotment | Current Active Grazing Preference | 5-Year Licensed Use 1/ | Total Forage Production | Forage Not Allocated 1/ | Wild-life AUM's | Initial Livestock Allocation 3/ | % Change From Pref. | % Change from 5-Year Use | Existing & Proposed Season-of-Use | Kind of Livestock |
|---|---|---|---|---|---|---|---|---|---|---|
| 524 Garat Individual | 80 | 80 | 44 | 0 | 0 | 44 | - 45 | - 45 | 3/15-11/15 | H |
| 584 Garat | 33,305 | 22,378 | 14,012 | 0 | 342 | 13,670 | - 59 | - 39 | 4/1-9/30 | C |
| 629 "45" | 3,852 | 3,852 | 8,098 | 4,038 | 208 | 3,852 | 0 | 0 | 3/1-2/28 | C & H |
| 636 Roaring Springs | 430 | 278 | 313 | 0 | 0 | 313 | - 27 | + 13 | 3/1-6/20 | C |
| 801 Castle Creek | 22,338 | 21,610 | 14,478 | 0 | 78 | 14,400 | - 36 | - 33 | 4/1-1/31 | C |
| 802 Battle Creek | 13,386 | 13,290 | 12,157 | 669 | 206 | 11,282 | - 15 | - 15 | 4/1-1/31 | C & H |
| 803 Big Springs | 17,851 | 16,248 | 14,648 | 0 | 394 | 14,254 | - 20 | - 12 | 3/16-11/30 | C & H |
| 804 Bennett | 960 | 717 | 644 | 0 | 3 | 641 | - 33 | - 11 | 5/1-10/15 | C |
| 805 Riddle | 27,199 | 23,475 | 15,091 | 0 | 232 | 14,859 | - 45 | - 37 | 3/16-2/28 | C & H |
| 806 Pole Creek* | 156 | 125 | 128 | 0 | 0 | 128 | - 18 | + 2 | 4/1-9/30 | C |
| 807 Camas Creek Pocket* | 375 | 375 | 529 | 0 | 4 | 525 | + 40 | + 40 | 7/1-9/30 | C |
| 808 Northwest | 13,400 | 10,363 | 20,034 | 1,164 | 158 | 18,712 | + 41 | + 81 | 3/16-2/28 | C |
| 809 Center | 6,661 | 5,896 | 17,816 | 0 | 42 | 17,774 | +167 | +201 | 3/16-2/28 | C |
| 810 Scotts Table | 575 | 576 | 677 | 0 | 30 | 647 | + 13 | + 13 | 4/16-5/31 | C |
| 811 Canyon View Seeding* | 2,281 | 837 | 1,741 | 0 | 6 | 1,735 | - 24 | + 10 | 3/1-3/31 &<br>10/1-2/28 | C |
| 812 Miller Table Seeding* | 740 | 685 | 986 | 0 | 6 | 980 | + 32 | + 43 | 11/16-1/31 | C |
| 813 Mtn. Home Subunit | 9,318 | 6,459 | 10,447 | 0 | 93 | 10,354 | + 12 | + 62 | 4/31-6/30 &<br>11/1-12/30 | C |
| 814 Long Tom Subunit | 3,134 | 2,055 | 3,416 | 0 | 88 | 3,328 | + 9 | + 66 | 4/1-12/15 | C |
| 815 Mud Springs | 1,516 | 1,308 | 1,809 | 0 | 9 | 1,800 | + 19 | + 38 | 4/1-12/30 | C |
| 816 Lockman Butte* | 542 | 542 | 542 | 0 | 0 | 542 | 0 | 0 | 11/16-1/31 | C |
| 817 Martha Ave. | 871 | 781 | 871 | 0 | 0 | 871 | 0 | + 10 | 4/1-6/30 &<br>11/1-12/30 | C |
| 818 Ditto Creek | 2,128 | 1,789 | 2,227 | 0 | 99 | 2,128 | 0 | + 16 | 4/1-1/31 | C |
| 819 Div | 313 | 479 | 476 | 0 | 35 | 441 | + 52 | 0 | 5/16-10/30 | C |
| 820 Cornell | 1,314 | 1,068 | 792 | 0 | 18 | 774 | - 40 | - 26 | 4/1-6/15 &<br>10/16-12/31 | C |
| 821 Chalk Flat* | 2,511 | 2,171 | 2,145 | 0 | 0 | 2,145 | - 15 | - 1 | 4/1-6/30 &<br>10/16-12/31 | C & S |
| 822 Slater Flat* | 2,618 | 1,200 | 1,200 | 0 | 0 | 1,200 | - 54 | 0 | 4/1-6/30 &<br>10/16-12/15 | C |
| 823 McConnell* | 15 | 15 | 123 | 0 | 23 | 100 | +850 | +850 | 10/1-10/31 | C |
| 824 Bonneville Point* | 522 | 332 | 315 | 0 | 3 | 312 | - 40 | - 5 | 3/1-4/30 & | C |
| 825 Sunnyside Spring-Fall* | 23,852 | 11,770 | 20,065 | 0 | 0 | 20,065 | - 16 | + 70 | 4/1-6/30<br>10/16-12/15 | C & S |
| 826 Sunnyside Winter* | 14,361 | 11,587 | 13,711 | 0 | 6 | 13,705 | - 5 | + 18 | 12/16-2/28 | C & S |
| 827 Rattlesnake Seeding* | 1,368 | 1,294 | 1,672 | 0 | 0 | 1,672 | + 22 | + 29 | 4/1-12/31 | C |
| 828 Crater Ring Seeding* | 748 | 673 | 398 | 0 | 0 | 398 | - 47 | - 41 | 4/3-6/5 | C |
| 829 2+ Custodial* | 202 | 70 | 260 | 0 | 9 | 251 | + 29 | +271 | 4/1-12/15 | C |
| 830 Section 34* | 10 | 10 | 10 | 0 | 0 | 10 | 0 | 0 | 4/1-8/31 | C |
| 831 Sheep Creek* | 276 | 231 | 231 | 0 | 0 | 231 | - 16 | 0 | 4/1-5/30 &<br>11/1-12/15 | C |
| 832 Duck Ponds* | 56 | 56 | 56 | 0 | 0 | 56 | 0 | 0 | 7/1-10/15 | C |
| 833 Section 35* | 17 | 17 | 17 | 0 | 0 | 17 | 0 | 0 | 4/1-4/30 | C |
| 834 Rattlesnake Creek* | 220 | 204 | 223 | 0 | 3 | 220 | 0 | + 7 | 4/1-9/30 &<br>10/16-11/30 | C |
| 836 West Tacket Creek* | 264 | 264 | 277 | 0 | 7 | 270 | + 5 | + 5 | 4/1-10/31 | C |
| 837 Rabbit Springs* | 84 | 75 | 25 | 0 | 0 | 25 | - 70 | - 67 | 4/1-9/30 | C |
| 838 Section 1* | 8 | 8 | 10 | 0 | 0 | 10 | + 25 | + 25 | 4/1-4/30 &<br>10/1-10/31 | C |
| 839 Melba Seeding* | 300 | 300 | 322 | 0 | 0 | 322 | + 7 | + 7 | 4/1-6/30 &<br>10/16-11/30 | C |
| 840 Strickland-Hall-Yates | 2,666 |  | 3,112 | 0 | 28 | 3,084 | + 16 |  | 3/1-3/31 &<br>6/16-9/30 | C |
| 841 Buckhorn* | 444 |  | 652 | 0 | 1 | 651 | + 47 |  | 3/1-2/28 | C |
| 842 M & L | 1,100 | 24,257 4/ | 1,559 | 0 | 7 | 1,552 | + 41 |  | 3/1-5/30 &<br>11/1-12/31 | C |
| 843 Simplot | 10,174 |  | 7,758 | 0 | 57 | 7,701 | - 24 |  | 3/1-2/28 | C |
| 844 Tindall & Sons | 6,224 |  | 6,901 | 0 | 30 | 6,871 | + 10 |  | 3/1-2/28 | C & H |
| 845 Antelope Creek | 2,135 |  | 2,781 | 0 | 13 | 2,768 | + 30 |  | 3/1-6/30 &<br>9/16-2/28 | C & H |
| 846 Alzola | 5,314 |  | 4,680 | 0 | 95 | 4,585 | - 14 |  | 3/1-2/28 | C & H |
| Total | 238,214 | 189,800 | 210,479 | 5,871 | 2,333 | 202,275 | - 15 | + 7 |  |  |

* Less intensive allotments.

1/ Reductions or increases would not be more than 15% from this figure in accordance with 43 CFR 4110.3-2(d)3.
2/ Includes forage not allocated because of lack of water.
3/ This allocation would be achieved in 5-years through development of water.
4/ Total 5-year licensed use for allotments 840 through 846.

and still satisfy plant growth requirements. Utilization levels of current year production vary with vegetation type, species composition, animal dietary preference and season-of-use. Utilization levels are normally between 30 and 50 percent.

The total amount of available vegetation was determined by a soil vegetative inventory (SVIM) conducted in 1979, 80 and 81 and by assessing current range condition data and licensed livestock use. The allocation of this vegetation between consumptive and non-consumptive uses was based on animal numbers (determined through the Bureau's planning process), animal forage requirements, dietary preference and plant maintenance requirements (Appendix A Summarizes the Procedures Used).

Table 2-2
Forage Allocation Summary (AUM's)

| | Total Forage Production | Wild-life Allo-cation | Forage Not Allo-cated 1/ | Livestock Allocation | % Change From Current Grazing Preference | % Change From 5 Year Ave. Use |
|---|---|---|---|---|---|---|
| Proposed Action | | | | | | |
| Initial | 210,479 | 2,333 | 5,871 | 202,275 | - 15 | + 7 |
| 20-Year | 283,244 | 2,333 | 11,126 | 269,785 | + 13 | + 42 |
| Continue Present Management | | | | | | |
| Initial | 210,479 | 0 | 20,679 | 189,800 2/ | - 20 | 0 |
| 20-Year | 207,696 | 0 | 17,896 | 189,800 2/ | - 20 | 0 |
| No Livestock Grazing | | | | | | |
| Initial | 210,479 | All forage is available for wildlife & non-consumptive use. | | 0 | -100 | -100 |
| 20-Year | 261,737 | | | 0 | -100 | -100 |
| Increased Livestock Use | | | | | | |
| Initial | 210,479 | 2,333 | 4,038 | 204,108 | - 14 | + 8 |
| 20-Year | 283,667 | 2,333 | 4,038 | 277,296 | + 16 | + 46 |
| Reduced Livestock Use | | | | | | |
| Initial | 210,479 | 2,333 | 32,224 | 175,922 | - 26 | - 7 |
| 20-Year | 285,697 | 2,333 | 40,415 | 242,949 | + 2 | + 28 |

1/ Includes forage not allocated because of lack of water, May 15 turnout dates and/or conflicts with wilderness recommendations (See Appendix B).

2/ This alternative assumes that the 5-year average use of 189,800 AUM's would continue although the current active grazing preference would remain at 238,214 AUM's.

The initial livestock allocation figures on Table 2-1 represent the total amount of forage which could be properly used by livestock provided allotments are adequately watered. Current inventory information is not available to deliniate range potentially suitable due to lack of livestock water on most allotments. Suitability estimates due to lack of water were incorporated into the initial allocation figures for allotments 629, 802 and 808.

On allotments where forage is available but not useable by livestock due to lack of water, adjustments in the initial allocation would be made. The adjustments would be based on a 5-year phase-in of stocking rates based on monitoring studies. This phase-in procedure would be initiated immediately after a grazing use decision is issued. During the first year of this period no more than 15% from the 5-year licensed use (Table 2-1) would be implemented. This change would be evaluated until the third year. Further adjustments if necessary, would be made the third and fifth year of the phase-in period. By the end of the fifth year, the final stocking rate would be established.

Thus if significant acreage within an allotment is unwatered, the associated AUM's would be deducted to arrive at the final stocking level by the end of the 5-year monitoring period. This process would be followed on allotments showing reductions as well as on allotments with increases. For example, additional AUM's may be deducted from an allotment already showing a reduction if unwatered areas are present. As water is developed during the 5-year period, the reduction would be lessened. It is anticipated that most water development would be completed within this 5-year period.

This 5-year phase-in of adjustments along with the monitoring process would be completed with consultation and coordination with affected permittees and other interested groups in accordance with 43 CFR 4110.3.

Some allotments on Table 2-1 show proposed increases in livestock use even though a large portion of the allotment is in poor range condition. This is due to the fact that there is excess forage currently available or that would be made available through increased water development on portions of the allotment which are in fair or good condition. In these cases, the forage increases outweighed forage reductions.

## Livestock Grazing Management

Two levels of management are proposed. Intensive management would be applied to 25 allotments (1,930,741 acres) and less intensive management would be applied to 24 allotments (448,273 acres) (Map 2-1). Intensive management allotments are predominantly public land, have high resource values or exhibit a high potential for increased forage production and improvement in range condition. Allotment management plans (AMPs) incorporating specific grazing systems, levels of grazing use, season-of-use, range improvement projects and multiple use objectives would be prepared and implemented following completion of the EIS and Land Use Plan. In general, deferred use (2-4 pastures) systems would be developed in allotments currently used in the spring and fall. On summer use areas, deferred or rest rotation systems would be considered. Rest rotation and deferred rotation grazing systems have currently been identified for allotments 524, 584, 629 and 636 in the Owyhee portion of the study area. Grazing systems rest the range from grazing at suitable intervals dictated by the growth requirements of key forage plants. They are designed to counteract the effects of selective grazing by livestock. These systems would allow desirable forage species to recover vigor, produce seed and establish new seedings (Stoddart, Smith, and Box 1975). Consultation with allotment permittees and other interested parties would be an important part of the AMP development process.

Less intensive management would be applied to 24 allotments because of the small size or poor site potential of these allotments. AMP's would not be developed, however, grazing systems could be. These allotments could be moved into the intensive management category in the future.

The proposed season-of-use by allotment is shown in Table 2-1. As allotment management plans are implemented, season-of-use dates may be adjusted, but normally would remain within the time period specified.

### Measures to Protect Birds of Prey Habitat

Portions of both the Kuna and Bruneau Planning Units are withdrawn to be managed as the Snake River Birds of Prey Area (SRBOPA) Map 2-2. These lands are to be managed under multiple-use principles, with raptor ecosystem management the primary objective and other resource uses allowed, if compatible with maintaining the raptor population. Livestock grazing is a historical compatible use; however, either changes in range management practices or development of range improvements would first be considered as to their effects on the birds of prey ecosystem. Proposed range improvement projects that may conflict with birds of prey would be modified, redesigned or not constructed.

Habitat alterations within three miles of any golden eagle or prairie falcon eyrie would be designed to accommodate the prey habitat needs for these species.

Rangeland reseedings would provide a mixture of grasses, forbs and shrubs to support prey populations for raptors.

### Measures to Protect or Enhance Riparian or Fisheries Habitat

Upgrading fisheries habitat condition for red band trout and riparian associated wildlife has been identified as the primary management objective on 153 stream miles. These streams were selected from the stream miles that support red band trout (281 of the 457 stream miles supporting fisheries habitat condition). These 153 stream miles are in poor or fair condition, are receiving heavy livestock use and have a high potential for improvement. The remaining areas supporting red band trout (128 of the 281 miles) were not identified for special management practices because some are in fair or good condition and do not receive heavy livestock use because of topography, season-of-use or other factors. Others are in poor or fair condition but are intermingled with private or state land and it would be difficult to apply the management measures prescribed for the 153 stream miles. Also, off site impacts from some non-federal lands would reduce the beneficial improvement efforts on BLM lands. Areas that do not support red band trout (176 miles of the 457 miles) were not included for special fisheries habitat management because of restrictive fisheries habitat conditions (intermittant water flows or high sediment yields from non-federal lands).

The 153 miles include portions of the Owyhee and Bruneau Rivers, Shoofly Creek, Big Jacks Creek, Cottonwood Creek, Duncan Creek, Sheep Creek, Battle Creek, Pole Creek, Bull Creek, Poison Creek, Birch Creek and several others. The specific management proposal to obtain the land use plan objectives would be determined as allotment management plans or wildlife habitat management plans are developed. The following management practices could be initiated on these stream miles in order to ensure their improvement:

1) Grazing exclusion.
2) Rest rotation or deferred rotation grazing systems.
3) Limited season-of-use.
4) Placement of juniper trees along stream banks to increase cover and reduce livestock trampling (Map 2-3).
5) Salting livestock away from riparian areas.
6) Increased water development away from riparian zones.

Approximately 107 miles of the 153 stream miles are within narrow deep canyons. It is anticipated that grazing exclusion is the only practical method to accomplish riparian habitat improvement on these streams. This would be accomplished primarily through gap fencing of livestock access points.

If intensive livestock management practices are implemented as the primary method to improve fisheries habitat condition resource response would be carefully monitored. If habitat condition objectives are not being met, livestock would be excluded. Where grazing is excluded livestock use could be reintroduced after the time period required to bring habitat conditions to an upward trend and fair to good condition. Livestock use could then continue as long as these conditions were maintained.

In addition to the 153 stream miles identified for fisheries habitat improvement, 125 miles of stream and canyonland would be reserved for bighorn sheep, river otter, waterfowl and other riparian associated wildlife. Livestock use of these areas would be prevented by fencing, salting or development of water away from canyon areas. Management of stream miles is shown on Map 2-1.

## Measures to Protect or Enhance Cultural Resources

Livestock grazing would be excluded from several cultural resource sites currently being impacted by livestock (Map 2-1). Sites which would be excluded from grazing include:

1) Deer Water Spring,

2) Hole-in-Rock Spring,

3) Indian Bathtub,

4) specific sites within the Camas Creek/Pole Creek Archaeological District and Black Butte/Guffey Butte Archaeological District,

5) designated sites currently not named.

Remaining segments of the Oregon Trail and the associated Goodale's Cutoff and Kelton Road that contain well-preserved ruts or a low-standard two-track road would be preserved in their present condition. Motor vehicle use would not be allowed on undisturbed ruts without special authorization. Limited motorized use could occur on historic trail segments that are low-standard roads, if historic values would not be damaged. Heavy equipment or tracked vehicles would not be allowed along historic trail segments.

Scenic corridors with an average total width of 1/2 mile (1/4 mile each side) along remaining historic trail segments would be preserved in their present condition. The width of the corridors would vary depending on topography and the presence of private land and improved roads. Within the scenic corridors, range improvements and livestock controls would be located and designed to minimize conflicts with scenic and historic resources.

In the event a new fence would cross a historic trail segment, every effort would be made to route the fence across a disturbed portion of the trail. Fences which must cross trail remnants would cross the trail and scenic corridors at right angles. Necessary gates and/or cattleguards would be installed.

If no alternative exists, livestock water may be developed within historic trail corridors. These would be located and designed to minimize visual disturbance and to avoid livestock trailing and trampling of trail remnants. Since all remnants of the Oregon Trail have been determined eligible for the National Register of Historic Places, the National Advisory Council on Hisotric Places would be consulted on all projects affecting the trail.

## Measures to Enhance Existing Bighorn Sheep Habitat

The canyonlands of Little Jacks, Battle Creek, Deep Creek and the Owyhee River would be managed for bighorns and other wildlife. Livestock use of these areas would be prevented by salting or development of water away from canyon areas or fencing. Where livestock water is needed, water gaps would be provided.

A separation of use between cattle and bighorns would be maintained by not developing livestock water sources within bighorn habitat unless the potential adverse impact to bighorn sheep can be avoided or mitigated.

The conversion of existing cattle licenses to domestic sheep licenses would not be allowed if the domestic sheep would graze within one mile of bighorn sheep habitat.

No roads would be constructed into any proposed range improvement site within bighorn sheep habitat.

### Measures to Improve Mule Deer Habitat

Grazing systems would recognize the physiological requirements of key forbs and shrubs needed by mule deer. Utilization of key shrub species by all classes of animals would be limited to 50%. On mule deer winter ranges utilization of shrubs by livestock would be limited to 30%, thereby leaving 20% of the available annual production for wintering deer.

Vegetative treatments on deer ranges dominated by juniper and big sage sites would be designed to achieve a ratio of 60% forage to 40% cover. Such treatments, also, would not exceed one-fourth mile in width, and the optimum would retain continuous zones of interconnecting cover (600-1,200 feet wide) as well as associated cover patches of six to 26 acres.

### Measures to Improve Antelope Habitat

Vegetative manipulations on antelope ranges would be designed to maintain a 5-20% canopy cover of shrubs.

### Measures to Improve Sage Grouse Habitat

Vegetative treatment projects within two miles of known strutting grounds would be limited to practices which also enhance sage grouse habitat, since this area constitutes the breeding complex for sage grouse.

The density of the sagebrush canopy cover would be maintained at 20-30% within nesting habitats and at least 20% in known wintering habitats. In brood rearing areas the sagebrush canopy coverage would not be reduced below 10%.

## Project Development and Land Treatments

Over the years, a network of range improvements has been developed to facilitate management of grazing livestock and to improve rangeland resource conditions (Map 2-4). This network includes:

687 miles of fence
123 spring developments
279 reservoirs
Five wells
40 cattleguards
60 miles of pipeline
15,600 acres of brush control
115,000 acres of seeding

Additional fencing, water development and vegetative treatment practices are proposed to improve resource conditions and implement grazing systems. They are needed to achieve better distribution of livestock, increase livestock forage production, improve watershed condition, and improve the condition of areas for wildlife.

Estimated development needs would be as follows:

200 miles of pasture fence
50 miles of exclosure fence
125 spring developments
235 reservoirs
Six wells & storage tanks

Eight water catchments
75 cattleguards
105 miles of pipeline
234,000 acres of brush control
42,300 acres of brush control & seeding

Included in the above development needs is a proposal to construct 19 miles of pipeline between Big Jacks and Little Jacks Creek as shown on Map 2-5. This pipeline would provide water to a relatively unwatered plateau between these two creeks. The specific location of other projects would be determined as AMP's are developed. The location of potential land treatment areas is shown on Map 2-6 and the acreage of potential land treatment by allotment is shown on Table 2-3.

Table 2-3
Proposed Land Treatments - Proposed Action

| Allotment | Brush Control (acres) | Brush Control & Reseed (acres) |
|---|---|---|
| 524 Garat Individual | 500 | 0 |
| 584 Garat | 116,700 | 500 |
| 629 "45" | 67,400 | 0 |
| 636 Roaring Springs | 2,600 | 0 |
| 801 Castle Creek | 2,000 | 11,200 |
| 802 Battle Creek | 10,800 | 1,800 |
| 803 Big Springs | 8,800 | 400 |
| 804 Bennett | 900 | 1,000 |
| 805 Riddle | 12,000 | 9,700 |
| 808 Northwest | 1,200 | 700 |
| 809 Center | 800 | 0 |
| 812 Miller Table Seeding* | 0 | 1,100 |
| 813 Mtn. Home Subunit | 800 | 0 |
| 814 Long Tom Subunit | 1,600 | 0 |
| 817 Martha Ave. | 0 | 600 |
| 820 Cornell | 500 | 1,100 |
| 840 Strickland-Hall-Yates | 800 | 0 |
| 842 M & L | 0 | 1,200 |
| 843 Simplot | 1,700 | 7,500 |
| 844 Tindall & Sons | 800 | 3,000 |
| 845 Antelope Creek | 900 | 700 |
| 846 Alzola | 3,200 | 1,800 |
| Total | 234,000 | 42,300 |

* Less intensive allotments

Proposed project developments would cost approximately $2.9 million. Proposed and existing project developments would be periodically maintained as described in Table 2-4.

Table 2-4
Implementation and Maintenance Cost - Proposed Action

| Project | Proposed Units | BLM Cost | Rancher Cost (primarily labor) | Existing Projects | Maintenance Responsibility of Existing Projects* | | Annual BLM Maintenance Cost | Annual Rancher Maintenance Cost |
|---|---|---|---|---|---|---|---|---|
| | | | | | BLM | User | | |
| Pasture Fence (miles) | 200 | 240,000 | 160,000 | 683 mi | 166 mi | 517 mi | 2,490 | 10,755 |
| Exclosure Fence (miles) | 50 | 100,000 | 0 | 4 mi | 4 | 0 | 810 | 0 |
| Spring Development | 125 | 75,000 | 63,000 | 123 | 55 | 68 | 2,750 | 9,650 |
| Reservoir | 235 | 176,000 | 176,000 | 279 | 80 | 199 | 1,500 | 8,680 |
| Wells | 6 | 90,000 | 0 | 5 | 2 | 3 | 40 | 180 |
| Water Catchment | 8 | 160,000 | 0 | 0 | 0 | 0 | 0 | 600 |
| Cattleguards | 75 | 202,000 | 38,000 | 40 | 30 | 10 | 450 | 1,275 |
| Pipeline | 105 | 285,000 | 260,000 | 60 mi | 22 | 38 | 220 | 1,430 |
| Brush Control (acres) | 234,000 | 682,000 | 475,000 | 15,610 | All | | Unknown | Unknown |
| Brush Control & Seeding (acres) | 42,300 | 894,000 | 170,000 | 114,574 | All | | Unknown | Unknown |
| Total Costs | | 2,904,000 | 1,342,000 | | | | 8,360 | 32,570 |

* Livestock operators would maintain all new projects except stream exclosure fences.

## Project Development and Design Criteria

Fences - Fences would be constructed to establish allotment boundaries, divide allotments into pastures, and where necessary, to exclude livestock from springs, reservoirs and selected streams. Fences would be constructed to control livestock without adversely affecting deer and antelope passage. Existing management fences that create wildlife movement problems would be modified on a priority system. Fence posts would be a solid nonreflective color to minimize visual impacts. Proposed fence lines would not be bladed or scraped. Cattleguards would be installed where fences cross heavily traveled existing roads.

Spring Development - Water would be collected at the spring source by installing perforated pipe and collection boxes and piped approximately 100 feet to water troughs for livestock use. Live water would be provided for wildlife. Approximately 90% of the spring developments would be fenced. Springs would not be fenced where it is physically impossible due to steep or rocky terrain. Where necessary to maintain water at the spring source and protect riparian habitat, float valves would be installed to prevent constant drainage. Springs that do not have sufficient flow to supply both livestock and wildlife water would not be developed.

Reservoir Development - Dams would be constructed on or adjacent to ephemeral drainages to impound runoff water for livestock and wildlife. Water storage capacity would range from one to two acre-feet. Fill material would come from the impoundment area if possible. Where possible, reservoirs would be fenced, with water piped to troughs for livestock use, or gap fenced. Reservoirs built in association with seep areas would be constructed below the site to prevent loss of the riparian zone.

Pipeline Development - Pipelines would be developed to carry water from wells, springs or streams to areas with inadequate water. A storage tank or reservoir is generally located at the water source or at a high elevational point. Provisions would be made to avoid dewatering natural water sources.

Construction would consist of burying a plastic pipe approximately twenty inches below the ground. Pipelines are installed in two ways. On deep soils, a trenching machine is used to dig the trench, lay the pipe, and cover it with soil in one pass. The soil is mounded on top of the trench to minimize the depression after settling. A second method may be used in isolated instances when soil depth is limiting (less than 20"). A trench is opened, the pipe is laid, and the soil is mounded on top in three separate steps. Because of the limiting soil depth, topsoil is borrowed from an area approximately ten feet on either side of the trench. The trench opening averages two feet for each method. Water would be provided approximately every mile along the pipeline for livestock and wildlife. To provide water for wildlife that become dependent upon the new sources, pipelines would remain charged with water during the dry season or an alternative water source would be provided.

### Land Treatments

Approximately 276,300 acres of native range would be treated to reduce the invasion of sagebrush, juniper and annual grass species, improve ecological condition and increase grazing capacity. This treatment would consist of 234,000 acres of brush control and 42,300 acres of brush control and reseeding (Table 2-3).

Vegetative treatments would be restricted to areas in poor or fair range condition. Native range which is in good to excellent range condition would not be treated. Land treatment projects would be applied to sites which receive greater than 10" of precipitation and have soils with high productive potential. Areas with low productive potential are often dominated by cheatgrass and competition limits the success of land treatment projects. Current technology is lacking on cheatgrass infested areas and chances of a successful seeding is limited. It is felt that funds should be spent in areas where chances of successful land treatment projects are greater. Areas with high or critical erosion potential, unstable slopes, and where soil surveys indicate low success probability would not be treated.

During the activity planning process, site specific areas, acreage, and treatment techniques would be selected. In general, burning for brush and juniper control would receive first consideration. Where burning is not feasible (lack of ground fuel, unstable weather conditions, etc.) chemical treatment or chaining would be employed. Plowing and seeding would only be used when the treatment site is depleted and the potential for native grass recovery is poor. In those cases where reseeding (drill or broadcast) is necessary, native or introduced species may be selected depending on management objectives. Vegetative treatments would adhere to the following stipulations:

1) If pesticides/herbicides spraying techniques are used for treatment of native rangelands, a buffer zone of 150 feet would be established around perennial streams and riparian habitat areas. The effect of the pesticide/herbicide should not be evident within this area.

2) In areas identified as winter range for mule deer, antelope and sage grouse, allow for a sufficient forage to cover ratio that would meet these species needs.

3) Projects would be designed with irregular control lines, feathered edges and natural contours. Drainages and occasional brush islands would be left untreated on sites treated by mechanical or other means.

Standard Operating Procedures - The following procedures would be followed in the construction of all management facilities and vegetative treatments:

1) Roads or trails to new construction or project sites would not be allowed where existing roads and trails could be utilized or where off-road vehicles could be used. Roads would not be built into any proposed range improvement site within bighorn sheep habitat.

2) Class III Cultural Resource Inventories (intensive) would be performed at all project sites. All negative impacts to significant cultural resource sites would be mitigated by avoidance or salvage.

3) Before substantial (>10%) increases in livestock grazing occur in high cultural site density zones, those areas adjacent to existing water sources would be examined at a Class III Inventory level.

4) National Register sites, historic and archaeological districts, and sites and districts identified by District Staff Archaeologists as eligible for nomination to the National Register would be protected and managed according to 36 CFR 800 and PL-89-655, Section 106.

5) Project clearances for Threatened and Endangered species would be conducted on all project sites.

6) All wilderness values would be protected in lands under wilderness review.

Land use recommended plans have recommended about 315,500 acres as "suitable" for wilderness. Grazing actions proposed within these areas would be consistent with the BLM's Interim Management Policy for areas under wilderness review.

Activities or facilities established prior to wilderness designation would remain and may be replaced when necessary to properly administer the grazing program. The construction of new improvements would be primarily for resource protection and more effective management of these resources rather than to accommodate increased numbers of livestock. The numbers of livestock permitted to graze in wilderness would remain at the approximate level at the time of designation, unless it can be conclusively shown that increased livestock numbers would have no adverse impact on wilderness values.

All areas subject to wilderness review would be managed under the BLMs Wilderness Interim Management Policy (IMP) until released from the wilderness process. Proposed projects would be modified or deferred if necessary to assure compliance with Wilderness IMP.

7) All actions would be designed to address BLM Visual Resource Management criteria. Project developments would be designed to minimize adverse visual impacts.

8) Wildlife escape devices would be installed on all troughs and tanks.

9) In crucial wildlife habitats (winter ranges, raptor nest sites, strutting grounds, etc.), construction work on range improvements would be scheduled to avoid or minimize disturbance to wildlife.

10) Areas disturbed during project construction would be reseeded with a mixture of grasses, forbs and shrubs.

11) All actions would be designed to minimize adverse impacts to the soil, water and air resources.

12) As elements within the proposal are implemented, an environmental assessment would be made to assess any site specific impacts that are not addressed in this EIS.

13) A portion of the land within the EIS area is being considered for agricultural development. If current land ownership or use changes because of this or other land actions, livestock use would be adjusted accordingly.

Implementation Schedule

Adjustments in livestock use levels would be made following completion of the EIS and Land Use Plan. A five-year phase-in of the proposed increase or reduction would be initiated. A range monitoring program (actual use, forage utilization, and range trend studies) would be used to arrive at final livestock use levels by the end of the fifth year. This procedure would allow inventory results to be adjusted if necessary to arrive at a biologically sound, balanced forage allocation figure.

Development of Allotment Management Plans (AMP's) and proposed projects would be completed during the 10 year period following completion of the EIS. It is anticipated that water would be developed within the first five years. The priority for implementation would be as follows: Development of AMP's; water; fences; and land treatments.

## Monitoring Programs

Studies and evaluation procedures would be initiated in accordance with BLM Manual, Section 4430, to determine if the MFP and specific allotment objectives are being met. These studies would include compilation of actual use, range trend, range/watershed condition, watershed quality, utilization, weather data, carrying capacity, and wildlife habitat conditions. The study site would be selected and read cooperatively with livestock operators and other interested agencies where possible. Where specific objectives are not met, adjustments in season-of-use, livestock numbers (including removal) or grazing system would be made depending on the indicated need.

Utilization studies would be conducted using the key forage plant method (BLM Manual 4430). This method establishes key vegetative species and key areas that would be monitored for utilization. Key areas would be selected to allow management objectives to be monitored. For example, on areas where improvement of riparian or fisheries habitat conditions is the primary objective, the riparian zone would be established as the key area and would be monitored accordingly. On other areas or allotments, the key area may be selected to represent the majority of the grazing area within the allotment. Key species to be monitored may include but not be limited to bitterbrush, Idaho fescue, and bluebunch wheatgrass.

## ALTERNATIVE #1 - CONTINUE PRESENT MANAGEMENT

Under this alternative, the amount and timing of current grazing use would continue. The average annual licensed use for the past five years has been 189,800 AUM's and is assumed to continue at this level. Existing wildlife use would also continue at current levels. The following project developments, which are based on the type of project developments that have occurred within the area over the past 10 years, would occur:

| | |
|---|---|
| 90 miles of pasture fence | Two water catchments |
| 50 spring developments | 30 cattleguards |
| 100 reservoirs | 30 miles of pipeline |

The existing rest rotation grazing systems on the Garat Allotment (584) and Roaring Springs Allotment (636) would continue. The seasonal grazing patterns throughout the remainder of the area are assumed to continue as they currently exist. Allotment specific data is presented in the Bruneau-Kuna Unit Resource Analysis. Current season of use, kind of livestock, and average licensed use is shown on Table 2-1.

The management of cultural resource sites would be the same as that described in the proposed action.

This alternative would cost approximately $400,000 (Table 2-5) and would be implemented over a 10 year period.

Table 2-5
Implementation and Maintenance Cost - Continue Present Management

| Project | Proposed Units | BLM Cost ($) | Rancher Cost (primarily labor) ($) | Existing Projects | Maintenance Responsibility of Existing Projects | | Annual BLM Maintenance Cost ($) | Annual Rancher Maintenance Cost ($) |
|---|---|---|---|---|---|---|---|---|
| | | | | | BLM | User | | |
| Pasture Fence | 90 | 108,000 | 72,000 | 683 | 166 | 517 | 2,490 | 9,105 |
| Exclosure Fence | 0 | 0 | 0 | 4 | 4 | 0 | 60 | 0 |
| Spring Development | 50 | 30,000 | 25,000 | 123 | 55 | 68 | 2,750 | 5,900 |
| Reservoir | 100 | 75,000 | 75,000 | 279 | 80 | 199 | 1,600 | 5,980 |
| Well | 0 | 0 | 0 | 5 | 2 | 3 | 40 | 60 |
| Water Catchment | 2 | 40,000 | 0 | 0 | 0 | 0 | 0 | 150 |
| Cattleguards | 30 | 81,000 | 0 | 40 | 30 | 10 | 450 | 600 |
| Pipeline | 30 | 60,000 | 75,000 | 60 | 22 | 38 | 220 | 680 |
| Total Costs | | 394,000 | 247,000 | | | | 7,610 | 22,475 |

## ALTERNATIVE #2 - NO LIVESTOCK GRAZING

Under this alternative, all livestock grazing would be eliminated. All vegetation would be available for wildlife and non-consumptive uses. Project development and land treatment projects for livestock would not be implemented. Existing fences would be removed at a cost of approximately $550,000.

## ALTERNATIVE #3 - INCREASED LIVESTOCK USE

This alternative addresses additional range improvements and increased forage allocations that could occur if Congress does not designate any of the wilderness study areas as wilderness. These projects were not included in the proposed action because of conflicts with wilderness recommendations.

### Forage Allocation

The forage allocation to livestock would be 1,833 AUM's above that described in the proposed action because 41 miles in place of 19 miles of pipeline is proposed on the Jacks Creek plateau. The allocation by allotment would be the same as described in the proposed action (Table 2-1) except for the Battle Creek (#802) and Northwest (#808) allotments. The allocation for these allotments and the study area total for this alternative is shown in Table 2-6.

Table 2-6
Vegetative Allocation - Increased Livestock Use

| Allotment | Active Preference | 5-Year Licensed Use | Total Forage Production | Forage Not Allocated | Wildlife Allocation | Livestock Allocation | % Change from Preference | % Change from 5-Year Use |
|---|---|---|---|---|---|---|---|---|
| 802 Battle Cr. | 13,386 | 13,290 | 12,157 | 0 | 206 | 11,951 | - 11% | - 10% |
| 808 Northwest | 13,400 | 10,363 | 20,034 | 0 | 158 | 19,876 | + 48% | + 92% |
| Study Area Total | 238,214 | 189,800 | 210,479 | 4,038 | 2,333 | 204,108 | - 14% | + 8% |

### Grazing Management

The grazing management would be the same as that described in the proposed action.

### Project Development

Project development would be the same as that described in the proposed action with the following exceptions:

1) An additional 22 miles of pipeline on the Jacks Creek plateau would be added to the 19 miles of pipeline proposed in the proposed action (Map 2-5).

2) An Additional 700 acres of brush control and reseeding would be implemented on allotment 802 and an additional 900 acres of brush control would be implemented on allotment 803. The land treatment proposals for these allotments are shown in Table 2-7.

Table 2-7
Land Treatments - Increased Livestock Use

| Allotment | Brush Control (acres) | | Brush Control & Reseed (acres) | |
|---|---|---|---|---|
| | Proposed Action | Alt. 3 | Proposed Action | Alt 3 |
| 802 Battle Creek | 10,800 | 10,800 | 1,800 | 2,500 |
| 803 Big Springs | 8,800 | 9,700 | 400 | 400 |
| Study Area Total | 234,000 | 234,900 | 42,300 | 43,000 |

Project development design criteria, standard operating procedures, and implementation schedules would be the same as described in the proposed action. Implementation and maintenance cost of this alternative is shown in Table 2-8.

Table 2-8
Implementation and Maintenance Cost - Increased Livestock Use

| Project | Proposed Units | BLM Cost ($) | Rancher Cost (primarily labor) ($) | Existing Projects | Maintenance Responsibility of Existing Projects | | Annual BLM Maintenance Cost ($) | Annual Rancher Maintenance Cost ($) |
|---|---|---|---|---|---|---|---|---|
| | | | | | BLM | User | | |
| Pasture Fence (miles) | 200 | 240,000 | 160,000 | 683 mi | 166 mi | 517 mi | 2,490 | 10,755 |
| Exclosure Fence (miles) | 50 | 100,000 | 0 | 4 mi | 4 | 0 | 810 | 0 |
| Spring Development | 125 | 75,000 | 63,000 | 123 | 55 | 68 | 2,750 | 9,650 |
| Reservoir | 235 | 176,000 | 176,000 | 279 | 80 | 199 | 1,500 | 8,680 |
| Wells | 6 | 90,000 | 0 | 5 | 2 | 3 | 40 | 180 |
| Water Catchment | 8 | 160,000 | 0 | 0 | 0 | 0 | 0 | 600 |
| Cattleguards | 75 | 202,000 | 38,000 | 40 | 30 | 10 | 450 | 1,275 |
| Pipeline | 127 mi | 348,000 | 273,000 | 60 mi | 22 | 38 | 220 | 1,650 |
| Brush Control (acres) | 234,900 | 687,000 | 477,000 | 15,610 | All | | Unknown | Unknown |
| Brush Control & Seeding (acres) | 43,000 | 910,000 | 173,000 | 114,574 | All | | Unknown | Unknown |
| Total Costs | | 2,988,000 | 1,360,000 | | | | 8,360 | 32,790 |

* Livestock operators would maintain all new projects except stream exclosure fences.

## ALTERNATIVE #4 - REDUCED LIVESTOCK USE

This alternative addresses a lower level of livestock use, has later turn out dates on 17 allotments, assumes that none of the Jacks Creek pipeline would be built, and also assumes a lower level of funding than the proposed action. The funding level is based on the amount of range improvement money and grazing advisory board money that is expected to be returned to the study area over a ten year period. The implementation and maintenance cost of this alternative is shown on Table 2-9.

Table 2-9
Implementation and Maintenance Cost - Reduced Livestock Use

| Project | Proposed Units | BLM Cost ($) | Rancher Cost (primarily labor) ($) | Existing Projects | Maintenance Responsibility of Existing Projects | | Annual BLM Maintenance Cost ($) | Annual Rancher Maintenance Cost ($) |
|---|---|---|---|---|---|---|---|---|
| | | | | | BLM | User | | |
| Pasture Fence (miles) | 200 | 240,000 | 160,000 | 683 mi | 166 mi | 517 mi | 2,490 | 10,755 |
| Exclosure Fence (miles) | 50 | 100,000 | 0 | 4 mi | 4 | 0 | 810 | 0 |
| Spring Development | 125 | 75,000 | 63,000 | 123 | 55 | 68 | 2,750 | 9,650 |
| Reservoir | 235 | 176,000 | 176,000 | 279 | 80 | 199 | 1,500 | 8,680 |
| Wells | 6 | 90,000 | 0 | 5 | 2 | 3 | 40 | 180 |
| Water Catchment | 8 | 160,000 | 0 | 0 | 0 | 0 | 0 | 600 |
| Cattleguards | 75 | 202,000 | 38,000 | 40 | 30 | 10 | 450 | 1,275 |
| Pipeline | 86 mi | 172,000 | 215,000 | 60 mi | 22 | 38 | 220 | 1,240 |
| Brush Control (acres) | 152,400 | 500,000 | 390,000 | 15,610 | All | | Unknown | Unknown |
| Brush Control & Seeding (acres) | 42,300 | 894,000 | 170,000 | 114,574 | All | | Unknown | Unknown |
| Total Costs | | 2,609,000 | 1,212,000 | | | | 8,360 | 32,380 |

* Livestock operators would maintain all new projects except stream exclosure fences.

## Forage Allocation

Under this alternative, 175,922 AUM's of forage would be allocated to livestock (Table 2-10). By adjusting the livestock turn out dates to May 15th, 28,755 AUM's of forage would not be grazed by livestock (Appendix Table B-4). This forage is not allocated to livestock during the remainder of the grazing season so that grazing conflicts with other resource uses would be minimized.

The proposed forage allocation for the Battle Creek (802) and the Northwest (808) allotments is reduced by 2,332 AUM's, because this alternative does not include the development of the Jacks Creek pipeline.

## Grazing Management

Grazing management would be the same as described in the proposed action, except that the livestock turn out dates have been adjusted to May 15 on 17 allotments to minimize conflicts between livestock and antelope and sage grouse. The following allotments are affected:

584
629
801
802
803
805
808
809
810
814
840
841
842
843
844
845
846

## Table 2-10
## Forage Allocation - Reduced Livestock Use
## (AUM's)

| Allotment | Current Active Grazing Preference | 5-Year Licensed Use | Total Forage Production | Forage Not Allocated 1/ | Wild-life AUM's | Initial Livestock Allocation | % Change From Pref. | % Change from 5-Year Use | Proposed Season-of-Use |
|---|---|---|---|---|---|---|---|---|---|
| 524 Garat Individual | 80 | 80 | 44 | 0 | 0 | 44 | - 45 | - 45 | 3/15-11/15 |
| 584 Garat | 33,305 | 22,378 | 14,012 | 2,444 | 342 | 11,226 | - 66 | - 50 | 5/16-9/30 |
| 629 "45" | 3,852 | 3,852 | 8,098 | 4,338 | 208 | 3,552 | - 8 | - 8 | 5/16-2/28 |
| 636 Roaring Springs | 430 | 278 | 313 | 0 | 0 | 313 | - 27 | + 13 | 3/1-6/20 |
| 801 Castle Creek | 22,338 | 21,610 | 14,478 | 1,171 | 78 | 13,229 | - 41 | - 39 | 5/16-1/31 |
| 802 Battle Creek | 13,386 | 13,290 | 12,157 | 3,669 | 206 | 8,282 | - 38 | - 38 | 5/16-1/31 |
| 803 Big Springs | 17,851 | 16,248 | 14,648 | 2,755 | 394 | 11,499 | - 36 | - 29 | 5/16-11/30 |
| 804 Bennett | 960 | 717 | 644 | 0 | 3 | 641 | - 33 | - 11 | 5/1-10/15 |
| 805 Riddle | 27,199 | 23,475 | 15,091 | 2,565 | 232 | 12,294 | - 55 | - 48 | 5/16-2/28 |
| 806 Pole Creek* | 156 | 125 | 128 | 0 | 0 | 128 | - 18 | + 2 | 4/1-9/30 |
| 807 Camas Creek Pocket* | 375 | 375 | 529 | 0 | 4 | 525 | + 40 | + 40 | 7/1-9/30 |
| 808 Northwest | 13,400 | 10,363 | 20,034 | 5,473 | 158 | 14,403 | + 7 | + 39 | 5/16-2/28 |
| 809 Center | 6,661 | 5,896 | 17,816 | 2,632 | 42 | 15,142 | +127 | +157 | 5/16-2/28 |
| 810 Scotts Table | 575 | 576 | 677 | 451 | 30 | 196 | - 66 | - 66 | 5/16-5/31 |
| 811 Canyon View Seeding* | 2,281 | 837 | 1,741 | 0 | 6 | 1,735 | - 24 | + 10 | 3/1-3/31 &<br>10/1-2/28 |
| 812 Miller Table Seeding* | 740 | 685 | 986 | 0 | 6 | 980 | + 32 | + 43 | 11/16-1/31 |
| 813 Mtn. Home Subunit | 9,318 | 6,459 | 10,447 | 0 | 93 | 10,354 | + 12 | + 62 | 4/31-6/30 &<br>11/1-12/30 |
| 814 Long Tom Subunit | 3,134 | 2,055 | 3,416 | 618 | 88 | 2,710 | - 14 | - 32 | 5/6-12/15 |
| 815 Mud Springs | 1,516 | 1,308 | 1,809 | 0 | 9 | 1,800 | + 19 | + 38 | 4/1-12/30 |
| 816 Lockman Butte* | 542 | 542 | 542 | 0 | 0 | 542 | 0 | 0 | 11/16-1/31 |
| 817 Martha Ave. | 871 | 781 | 871 | 0 | 0 | 871 | 0 | + 10 | 4/1-6/30 &<br>11/1-12/30 |
| 818 Ditto Creek | 2,128 | 1,789 | 2,227 | 0 | 99 | 2,128 | 0 | + 16 | 4/1-1/31 |
| 819 Dive Creek | 313 | 479 | 476 | 0 | 35 | 441 | + 52 | 0 | 5/16-10/30 |
| 820 Cornell | 1,314 | 1,068 | 792 | 0 | 18 | 774 | - 40 | - 26 | 4/1-6/15 &<br>10/16-12/31 |
| 821 Chalk Flat* | 2,511 | 2,171 | 2,145 | 0 | 0 | 2,145 | - 15 | - 1 | 4/1-6/30 &<br>10/16-12/31 |
| 822 Slater Flat* | 2,618 | 1,200 | 1,200 | 0 | 0 | 1,200 | - 54 | 0 | 4/1-6/30 &<br>10/16-12/15 |
| 823 McConnell* | 15 | 15 | 123 | 0 | 23 | 100 | +850 | +850 | 10/1-10/31 |
| 824 Bonneville Point* | 522 | 332 | 315 | 0 | 3 | 312 | - 40 | - 5 | 3/1-4/30 |
| 825 Sunnyside Spring-Fall* | 23,852 | 11,770 | 20,065 | 0 | 0 | 20,065 | - 16 | + 70 | 4/1-6/30<br>10/16-12/15 |
| 826 Sunnyside Winter* | 14,361 | 11,587 | 13,711 | 0 | 6 | 13,705 | - 5 | + 18 | 12/16-2/28 |
| 827 Rattlesnake Seeding* | 1,368 | 1,294 | 1,672 | 0 | 0 | 1,672 | + 22 | + 29 | 4/1-12/31 |
| 828 Crater Ring Seeding* | 748 | 673 | 398 | 0 | 0 | 398 | - 47 | - 41 | 4/3-6/5 |
| 829 2+ Custodial* | 202 | 70 | 260 | 0 | 9 | 251 | + 29 | +271 | 4/1-12/15 |
| 830 Section 34* | 10 | 10 | 10 | 0 | 0 | 10 | 0 | 0 | 4/1-8/31 |
| 831 Sheep Creek* | 276 | 231 | 231 | 0 | 0 | 231 | - 16 | 0 | 4/1-5/30 &<br>11/1-12/15 |
| 832 Duck Ponds* | 56 | 56 | 56 | 0 | 0 | 56 | 0 | 0 | 7/1-10/15 |
| 833 Section 35* | 17 | 17 | 17 | 0 | 0 | 17 | 0 | 0 | 4/1-4/30 |
| 834 Rattlesnake Creek* | 220 | 204 | 223 | 0 | 3 | 220 | 0 | + 7 | 4/1-9/30 &<br>10/16-11/30 |
| 836 West Tacket Creek* | 264 | 264 | 277 | 0 | 7 | 270 | + 5 | + 5 | 4/1-10/31 |
| 837 Rabbit Springs* | 84 | 75 | 25 | 0 | 0 | 25 | - 70 | - 67 | 4/1-9/30 |
| 838 Section 1* | 8 | 8 | 10 | 0 | 0 | 10 | + 25 | + 25 | 4/1-4/30 &<br>10/1-10/31 |
| 839 Melba Seeding* | 300 | 300 | 322 | 0 | 0 | 322 | + 7 | + 7 | 4/1-6/30 &<br>10/16-11/30 |
| 840 Strickland-Hall-Yates | 2,666 | 24,257 2/ | 3,112 | 308 | 28 | 2,776 | + 4 |  | 6/16-9/30 |
| 841 Buckhorn* | 444 |  | 652 | 41 | 1 | 610 | + 37 |  | 5/16-2/28 |
| 842 M & L | 1,100 |  | 1,559 | 95 | 7 | 1,457 | + 32 |  | 5/16-5/30 &<br>11/1-12/31 |
| 843 Simplot | 10,174 |  | 7,758 | 1,265 | 57 | 6,436 | - 37 |  | 5/16-2/28 |
| 844 Tindall & Sons | 6,224 |  | 6,901 | 1,698 | 30 | 5,173 | - 17 |  | 5/16-2/28 |
| 845 Antelope Creek | 2,135 |  | 2,781 | 1,447 | 13 | 1,321 | - 38 |  | 5/16-6/30 &<br>9/16-2/28 |
| 846 Alzola | 5,314 |  | 4,680 | 1,254 | 95 | 3,331 | - 37 |  | 3/1-2/28 |
| Total | 238,214 | 189,800 | 210,479 | 32,224 | 2,333 | 175,922 | - 26% | - 7% |  |

---

* Less intensive allotments.

1/ Includes forage not allocated because of lack of water, 5/16 turnout dates and/or conflicts with wilderness recommendations.

2/ Total 5-year licensed use for allotments 840 through 846.

On allotments 813 and 815, livestock use would be made on seedings until May 15. Use could then be made on native range pastures within these allotments. Proposed livestock season-of-use is shown on Table 2-10.

Project Development

Project development would be the same as described in the proposed action with the following exceptions:

1) None of the Jacks Creek pipeline would be constructed.

2) The acreage of land treatments proposed for allotments 524, 584, 629 and 636 have been adjusted downward, so that their implementation cost would equal the amount of range improvement money anticipated to be returned to this area. The proposed treatment for this area and the study area total is shown in Table 2-11.

Table 2-11
Land Treatment - Reduced Livestock Use

| Allotment | Brush Control (acres) | | Brush Control & Reseed (acres) | |
|---|---|---|---|---|
| | Proposed Action | Alt. 4 | Proposed Action | Alt. 4 |
| 524 Garat Individual | 500 | 0 | 0 | 0 |
| 584 Garat | 116,700 | 85,600 | 500 | 500 |
| 629 "45" | 64,700 | 20,000 | 0 | 0 |
| 636 Roaring Springs | 2,600 | 0 | 0 | 0 |
| Study Area Total | 234,000 | 154,400 | 42,300 | 42,300 |

Project development design criteria, standard operating procedures and implementation schedules would be the same as described in the proposed action.

Alternatives Considered but Dropped from Further Study

A "Maximize Livestock Use" alternative was considered. However, because of the similarity of this alternative with Alternative 3 (Increased Livestock Use) it was decided to drop the Maximize Livestock Use alternative. To truly "maximize" livestock grazing, it would entail not allocating forage to wildlife and not applying special management to riparian areas, cultural resource sites or sensitive wildlife habitats. It is felt that if these management actions were not proposed, the alternative would not be viable.

## RELATIONSHIP OF THE PROPOSAL AND ALTERNATIVES TO THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) GOALS

The proposed action and alternatives considered in this EIS all achieve the requirements of NEPA and other environmental laws and policies. The proposal and alternatives are designed to use practicable means to create and maintain conditions under which man and nature can exist in productive harmony. In this context, there are no significant differences among the alternatives considered even though various levels of resource use and livestock production are addressed.

## COMPARISON OF THE PROPOSED ACTION AND ALTERNATIVES

Based on the information and analysis presented in Chapter 3 and 4, certain environmental impacts have been identified as a result of the proposal and alternatives. Table 2-12, on the following page, summarizes the 20-year impacts in relation to the existing situation.

## Table 2-12
## Comparative Impact Summary
## (Projected 20-Year Impacts)

| Resource | Present Situation | Proposed Action | Alternative #1 Continue Present Management | Alternative #2 No Grazing | Alternative #3 Increased Livestock Use | Alternative #4 Reduced Livestock Use |
|---|---|---|---|---|---|---|
| Vegetation: | | | | | | |
| Condition Class (% of area) | | | | | | |
| Excellent | Trace | Trace | Trace | 2% | Trace | Trace |
| Good | 14% | 26% | 15% | 26% | 26% | 27% |
| Fair | 19% | 24% | 18% | 28% | 24% | 24% |
| Poor | 54% | 35% | 54% | 31% | 35% | 34% |
| Treated | 13% | 15% | 13% | 13% | 15% | 15% |
| Soil & Water Resources: | | | | | | |
| Soil Stability | Uplands are generally stable. However, stream bank erosion is occurring on those streams in poor condition (26% of public stream miles). 49% are in fair condition, & 25% in good & excellent condition. | Stream areas being fenced or receiving special management would improve on 26% of public stream miles. Soil stability would decrease on areas presently in poor & fair condition (49% of public stream miles). 25% would remain unchanged. | Soil stability of stream banks would decrease in areas accessible by livestock (about 75% of public stream miles). 25% would remain unchanged. | Soil stability of all stream banks presently in poor & fair condition would increase (75% of public stream miles). 25% would remain unchanged. | Same as Proposed Action | Soil stability of stream banks & riparian areas would improve on 46% of the area's public stream miles 29% would decline in soil stability & 25% would remain unchanged. |
| Wildlife: | | | | | | |
| Mule Deer | Approximately 81% of the mule deer habitat is in poor or fair condition.<br>Population:<br>2,345 Summer<br>5,075 Winter | Improved range conditions & forage allocations would benefit mule deer. Management objectives would be met.<br>Population:<br>3,175 Summer<br>5,840 Winter | Competition would continue on rangea in poor & fair condition & season of use conflicts would continue on spring & winter ranges. Management objective would not be met. | Elimination of livestock competition for forbs & grasses & improvement in vegetative condition would benefit mule deer. Populations would exceed management objectives. | Similar to proposed action. Some expanded water development. | Delayed (May 15) livestock turnout would remove spring competition for grass. Removal of competition should result in healthier does & a resultant better fawn crop. Management population objectives would be achieved. |
| Antelope | Approximately 80% of the antelope habitat is in poor or fair condition.<br>Population:<br>980 summer<br>840 Winter | Winter/spring ranges would improve slightly but remain in poor condition. Competition for grasses & forbs on summer ranges would continue. Population levels would remain static | Habitat conditions & population levels would remain static. | Elimination of livestock competition for grasses & forbs would be beneficial to antelope. Populations would exceed 1,580 animals. | Similar to proposed action. Some expanded water development. | Lack of spring competition for grasses & forbs (prior to May 15) would benefit pregnant does & antelope health in general. Population would increase to 1,580 animals. |
| Bighorn Sheep | Habitat Condition:<br>Excellent - 1%<br>Good - 29%<br>Fair - 40%<br>Poor - 29% | Generally beneficial Jacks Creek pipeline may displace 5-10 bighorns. Management goals would be met if the Battle Creek habitat improves. | Habitat conditions would not change. Since most is in satisfactory condition, management objectives would be met. | Habitat conditions would improve & management objectives would be met. | Jacks Creek pipeline would severely impact bighorn sheep habitat & cause intraspecific stress. Bighorn inbreeding & resultant loss of the Little Jacks population would be expected. | Improvement in upland range condition would result. Management objectives would be met. |
| Sage Grouse | Most habitat is currently in unsatisfactory condition & water distribution limits suitable habitat. | Although forage allocation & fencing of riparian areas would benefit sage grouse, continued competition for forbs on spring & summer ranges may have adverse impacts on young sage grouse. Population levels would remain unchanged. | Habitat conditions would remain unchanged. Population levels would remain the same or decline. | Habitat conditions, particularly riparian areas would improve. Population levels should double. | Similar to proposed action. Some expanded water development. | Later May 15 livestock turnout would allow greater growth of forbs & grasses on uplands & meadows. Improved food & cover for sage grouse chick would re opulation should exceed current level. |
| Birds of Prey | Birds of prey that depend on the townsend ground squirrels may be affected by the proposal and alternatives. | Increases in livestock use on spring ranges may adversely impact prey species during years of below normal precipitation. | Present levels of grazing do not appear to be adversely impacting prey populations. | Little change in preaent conditions. Perennial grass could supply adequate nutrition to prey species in drought years | Same as the proposed action. | Same as the proposed action. |

Table 2-12 (cont.)
Comparative Impact Summary
(Projected 20-Year Impacts)

| Resource | Present Situation | Proposed Action | Alternative #1 Continue Present Management | Alternative #2 No Grazing | Alternative #3 Increased Livestock Use | Alternative #4 Reduced Livestock Use |
|---|---|---|---|---|---|---|
| **Fisheries:** | | | | | | |
| Fisheries Habitat Condition (miles of stream) | | | | | | |
| Excellent | 2 | 21 | 2 | 269 | Same as Proposed Action | 47 |
| Good | 113 | 186 | 78 | 157 | | 200 |
| Fair | 221 | 113 | 180 | 31 | | 179 |
| Poor | 121 | 137 | 197 | 0 | | 31 |
| Water Quality and Quantity (% on 21 streams) | | | | | | |
| Excellent | 0 | 58 | 0 | 67 | Same as Proposed Action | 62 |
| Good | 57 | 29 | 18 | 21 | | 26 |
| Fair | 23 | 10 | 39 | 12 | | 10 |
| Poor | 20 | 2 | 43 | 0 | | 2 |
| Trout Populations | 915,000 | 8% increase | 13% decrease | 47% increase | Same as Proposed Action | 25% increase |
| **Visual Resources:** | Scenic quality varies from low to high. | General decline in scenic quality. Some adverse impacts due to project development & continued heavy livestock use on some riparian areas. Enhancement of fenced riparian areas. | Slight decline in scenic quality. | Improvement in scenic quality. | Similar to proposed action. Scenic quality would be lessened in the area of the Jacks Creek pipeline. | Scenic quality would be enhanced on fenced stream miles & on certain streams affected by May 15 turnout dates. Scenic quality of the Jacks Creek plateau would be maintained. |
| **Wilderness:** | | | | | | |
| Wilderness Characteristics | All WSAs (447,000 acres) natural appearing, roadless, with outstanding opportunities for primitive recreation and/or solitude. | Potential project development affecting 144,000 acres recommended as nonsuitable for wilderness; brush control/seeding would destroy wilderness characteristics on 19,250 acres; chemical spraying on 5,450 acres; controlled burning (fireline construction) 6,650 acres | No Impact; maintenance of present conditions. | All wilderness characteristics would be enhanced; apparent naturalness improved; opportunities for solitude & primitive recreation expanded. | Potential project development could affect all acres; wilderness character of plateau between Little & Big Jacks destroyed by pipeline; brush control/seeding would destroy wilderness character of 19,950 acres; 6,350 acres sprayed with chemicals. | Same as Proposed Action |
| Supplemental Values | 48,200 acres in good ecological condition provide representation of Sagebrush Steppe ecosystem under natural conditions; sensitive species habitat (bighorn sheep, river otter, mt. quail, red-banded trout) | Increased livestock grazing on 43,500 of 48,200 acres; pipeline would increase grazing pressure on 7,200 of these acres. Wilderness values would decline on these areas. | Decreased grazing on 35,000 acres; increased grazing on 13,000 acres. Wilderness values would change correspondingly. | No livestock grazing 48,200 acres in good condition have potential to return to pristine natural condition if livestock grazing is eliminated. | Increased grazing on all 48,200 acres; grazing increased on all of 1,000 acre proposed Research Natural Area. Ecological values would decline on these areas. | Increased livestock grazing on 36,500 acres; no increase on 11,700 acres; no impacts from pipeline. |
| **Recreation:** | | | | | | |
| Quality | Fair to Good | Quality would improve. | Quality would remain static or decline. | Quality would improve. | Quality would improve. | Quality would improve. |
| Hunting Use (hunter days) | 123,000 | 194,600 | 184,500 | 210,000 | 194,600 | 205,000 |
| **Livestock:** (AUMs) | | | | | | |
| Initial Allocation | 5 year average licensed use - 189,800 | 202,275 | 189,800 | 0 | 204,108 | 175,922 |
| 20 Year Allocation | Active Grazing Preference - 238,214 | 269,815 | 189,800 | 0 | 277,296 | 242,949 |

Table 2-12 (cont.)
Comparative Impact Summary
(Projected 20-Year Impacts)

| Resource | Present Situation | Proposed Action | Alternative #1 Continue Present Management | Alternative #2 No Grazing | Alternative #3 Increased Livestock Use | Alternative #4 Reduced Livestock Use |
|---|---|---|---|---|---|---|
| Economics: | | | | | | |
| Net Present Worth | NA | +$ 503,700 | -$ 715,900 | -$11,740,000 | +$ 625,900 | +$ 51,200 |
| Benefit Cost Ratio | NA | 1.156 | NA | 0.144 | 1.189 | 1,017 |
| Annual Rancher Income (returns above cash costs) | $1,823,156 | +$ 683,700 | No Change | -$1,593,304 | +$ 725,400 | +$ 476,800 |
| Range Improvement Construction Cost | | | | | | |
| BLM | $394,000 | $2.9 million | $394,000 | $550,00 | $3.0 million | $2.6 million |
| Rancher | $247,000 | $1.3 million | $247,000 | 0 | $1.4 million | $1.2 million |
| Annual Grazing Fee Distribution | | | | | | |
| Range Betterment | $176,500 | $255,000 | $176,500 | 0 | $256,000 | $226,100 |
| State of Idaho | 44,100 | 64,000 | 44,100 | 0 | 64,000 | 56,500 |
| Federal Treasury | 132,400 | 191,000 | 132,400 | 0 | 192,000 | 169,600 |
| Total | $353,000 | $570,000 | $353,000 | 0 | $512,000 | $452,200 |
| Regional Income Changes | | | | | | |
| Direct | ----- | +$ 990,700 | +$ 30,500 | -$1,114,900 | +$1,030,400 | +$1,067,600 |
| Secondary | ----- | +$ 299,200 | +$ 3,800 | -$ 511,400 | +$ 300,600 | +$ 288,600 |
| Regional Employment (jobs) | 13,961 | +132 | +2 | -127 | +134 | +147 |
| Social Conditions: | People feel the quality of life within the study area is good. | Most ranch related users could experience a strengthening of their social well being. | No change in the existing social systems. | The social well being of the ranching community would be adversely impacted. | Most ranch related users would experience a strengthening of their social well being. | Most ranch related users would experience a strengthening of their social well being. |

# CHAPTER 3
# DESCRIPTION OF THE AFFECTED ENVIRONMENT

## INTRODUCTION

This chapter contains a brief introduction and general setting of the EIS area followed by descriptions of environmental components which would be significantly impacted by the proposal or alternatives.

The EIS area is located in southwestern Idaho and northcentral Nevada. The topography is gently rolling to mountainous and dissected by several major streams and canyon systems. The elevation ranges from 2,300 feet along the Snake River to over 7,000 feet on the Owyhee plateau. Air quality is generally good. Occasional strong winds cause soil movement from agricultural land and occasional range fires cause minor localized air quality problems.

Winter temperatures dip below 0°F and summer temperatures frequently rise above 100°F. Precipitation information gathered at the Reynolds Creek experimental watershed adjacent to the EIS area has determined that November, December, and January are the wettest months while July, August, and September are the driest (Hanson, et. al. 1980). Precipitation ranges from approximately seven inches on the lower elevations to over 20 inches at the higher elevations. Runoff in the area occurs mostly during April and May, coinciding with seasonal snowmelt.

Within the EIS area, there are 79 livestock operators licensed for use in 49 allotments. Thirty-eight allotments are grazed by cattle, seven with cattle and horses, three by cattle and sheep and one by horses. Current use levels, seasons of use, and class of livestock are shown by allotment in Table 2-1.

Cow-calf and ewe-lamb are the major types of ranching operations in the EIS area. Livestock are wintered on BLM allotments and home ranches mostly within the EIS area. Livestock are turned onto BLM allotments in the spring and some remain until late fall. Twenty-three operators have Forest Service permits and graze their livestock on these allotments during the summer and early fall.

## VEGETATION

### Vegetation Types and Cover

The EIS area has nine major vegetation types: big sagebrush, low sagebrush, shadscale, winterfat, mixed mountain shrub, cheatgrass, mixed annuals, riparian and seedings. The vegetative types were determined by a remote sensing analysis and a Soil Vegetation Inventory (SVIM) conducted in 1979, 1980 and 1981. The location of each vegetation type found in the EIS area is shown on Map 3-1.

Livestock grazing, drought, and fire, have all had an adverse impact on vegetation. Original sagebrush-bunchgrass ranges have changed in plant composition. Many of the desirable perennial grass species have been replaced by less desirable plants, such as sagebrush, rabbitbrush, annual grasses and forbs.

Cover is the amount of ground surface protected by living vegetation, litter (dead organic matter), and various sized stones and rocks. According to Stoddart, Smith, and Box (1975), cover plays an important part in a plant's ability to produce forage. The less vegetation cover, the less effectively water can infiltrate the soil. Reduced infiltration increases runoff, which in turn reduces the effectiveness of precipitation.

The 1979-81 SVIM Inventory collected ground cover data on areas with high to critical erosion hazard ratings. These areas were also found to be generally in poor range condition. An analysis of 54 transects indicates that ground cover (rock, litter and basal vegetation) ranged from 37 to 96% with an average of 72%. Eighty-one percent of the sites had basal ground cover greater than 60%.

### Riparian Vegetation

Riparian vegetation in the EIS area constitutes the most environmentally sensitive vegetative type. This vegetative type is found in canyon bottoms, hillside drainages, along perennial streams and adjacent to springs and reservoirs. Since riparian areas are affiliated with water, these areas are congregation points for livestock. Because of this, livestock have had an adverse effect on many of the riparian areas through heavy utilization of vegetation and trampling to where many of these areas are currently in poor condition.

### Threatened or Endangered Plants

An inventory in 1979 and 1980 was conducted for threatened or endangered plant species. Four endangered plants *Astragalus mulfordiae*, *Eriogonium ochrocephalum* var. *sceptrum*, *Hackelia aphiobia* and *Primula cusickii* were found. Eight threatened plants were found *Astragalus atratus* var. *owyheensis*, *Astragalus camptopus*, *Astragalus iodanthus* var. *vipereous*, *Astragalus yoder-williamsii*, *Erigeron latus*, *Lepidium davisii*, *Lupinus uncialis* and *Peteria thompsonae*. These plants are maintaining themselves under present management.

The proposed action or alternatives would not adversely impact these plant species because changes in management or range improvements would not be undertaken which would threaten the viability of these plant populations. Site specific clearances done during the environmental assessment process would assure protection. Future discoveries, if any, would be dealt with on a case by case basis and appropriate mitigation measures developed to protect the identified species.

### Condition and Trend

Range condition is the present state of a site in relation to the climax (natural potential) plant community for the site. It is an expression of the relative degree to which the kind, proportion and amount of plants in a plant community relate to the climax community for the site.

Range site is an area of land having a combination of soil, climatic, topographic and natural biotic factors that is significantly different from adjacent areas. Changes from one site to another represent significant differences in potential forage production and recognize that better growth can be expected on a good site than on a poor site. A good site in poor condition may still be more productive than a poor site in its best possible condition. Unless these range sites are recognized, an area may be regarded as deteriorated when in fact it may be a poor site with limited potential (Stoddart, Smith and Box 1975).

Range condition data was collected during 1979, 80 and 81 as part of the SVIM inventory. The following range condition classes were used:

| Range Condition Class | Percent of Climax Plant Community |
|---|---|
| Excellent | 76-100 |
| Good | 51-75 |
| Fair | 26-50 |
| Poor | 0-25 |

Currently, 54% of the area is in poor condition, 19% fair, 14% good and less than 1% is in excellent condition. Thirteen percent of the area has had some type of vegetative manipulation or has been burned. These areas have not been assigned a condition rating. Range condition by allotment is shown in Appendix Table B-5 and on Map 3-2.

Trend refers to change in vegetation over time. Apparent trend data was collected as part of the SVIM inventory on all allotments in the EIS area and is the basis for the trend acreage. Appendix Table B-6 shows the apparent trend by allotment on the public land in the EIS area. Currently, the apparent trend is downward on 8% of the rea, non apparent on 74% of the area and an upward trend on 18% of the area.

Historically, heavy grazing by livestock, especially continuous grazing during the spring and early summer, has been the most important environmental change to range condition and trend. Spring and early summer is the most critical time of year for plants because carbohydrate reserves are at their lowest level. Historically, livestock have selectively grazed the more palatable plants and accessible areas. Most ranges have been grazed at the same time and in the same manner each year. Plants, in this area of relatively low precipitation, cannot tolerate the heavy and continuous early use because they have little opportunity for regrowth and carbohydrate replenishment during the dry summer. The continuous close grazing weakens the more palatable and accessible plants so that they are gradually killed out. Continuous heavy grazing also reduces the number of young plants available to replace normal death losses of older plants because no allowance is made for seed production and seedling establishment.

### Production

Vegetation production is the total amount of the above ground annual growth of all plant species. Vegetative production was determined from clipping studies conducted during the SVIM inventory. The current total usable forage production (210,509 AUM's) for all classes of grazing animals in the EIS area is shown in Table 2-1. Forage production can be altered by changes in condition, land treatments, use, climate, etc.

Forage production, as used throughout this document, is the amount of vegetation that can be properly used by grazing animals without detriment to the rangeland resource.

## SOIL AND WATER RESOURCES

### Introduction

The EIS area is located in the upper Snake River Basin hydrologic region. It's a 4,868 square mile area that accounts for about 7% of the hydrologic region. The EIS area has approximately 1,150 miles of perennial and major intermittant streams, 597 miles of which are on public land. Several hundred springs, reservoirs, and pipelines have been developed on public lands for use by livestock and wildlife. This developed water represents less than one percent of the estimated annual water yield for the area. Runoff in the EIS area occurs mainly from seasonal snowmelt or rain on frozen soils. Occassionally summer thunderstorms do produce some runoff but in most years this is not a major problem.

The primary uses of water in the EIS area are for irrigation, livestock and wildlife watering, and recreation. Livestock and wildlife consume about 210 ac. ft./yr.

Water quality in the EIS area is generally suitable for the various uses. Some water quality limitations do exist for domestic use and fisheries. Limitations for domestic use, which is minor in the EIS area, include turbidity, fecal coliform, iron and mercury. Water quality limitations on fisheries are discussed in the fisheries section.

A third order soil survey, which meets the National Cooperative Soil Survey standards, was conducted in the EIS area in 1979 and 1980. The soil survey was used for evaluating land use potential, helping establish potential natural plant communities, establishing initial stocking rates, and evaluating erosion hazard.

### Soil Stability

General soil mapping units have been analyzed to determine erosion hazard classes (Map 3-3). This analysis reflects the characteristics of the dominant soil types in the general mapping unit and not those of minor soil types.

Range inventory data indicates that 54% of the range is in poor condition and another 11% has been disturbed by fire. Most of the soils in the high and critical erosion hazard classes are in poor range condition. These areas are located mainly in a band along both sides of the Snake River and along the foothills at the northern end of the EIS area.

Soils with a tendancy to erode are held in place by vegetation, rocks, and litter. Ground cover, in areas of high and critical erosion hazard, averages 72%. This amount of ground cover is sufficient to provide soil stability. The vegetation in this area, however, consists largely of annual plant species which fluctuate in abundance yearly due to variations in precipitation. These annual species are not as dependable as perennial plants in providing soil protection from year to year. Annuals will not provide soil stability in the event of environmental change, such as drought.

Livestock use in many of the high and critical erosion hazard areas along the Snake River occurs in the spring. Early spring use (March-April) coincides with periods of high soil moisture content. Livestock trampling on these moist soils results in soil compaction. This reduces water infiltration and increases runoff.

Research from the Reynolds Creek Watershed indicates that stream bank breakdown can be a major source of sediment production (Johnson et. al. 1974). Fisheries habitat condition transects indicate that approximately 26% of the areas public stream miles may be in poor condition. This is due largely to concentration of grazing animals in riparian areas. Trampling of stream banks and utilization of vegetation has led to soil movement and sediment production.

## TERRESTRIAL WILDLIFE

### Introduction

The EIS area supports 148 resident and 184 migratory species of wildlife. This includes 64 mammals, 241 birds, 19 reptiles and eight amphibians. A species list by season-of-use can be found in the Unit Resource Analysis (URA) on file in the Boise District BLM Office, Boise, Idaho.

Only those species whose habitat and resulting populations could be significantly impacted by the proposed action or alternatives will be discussed. Other important wildlife species present in the EIS area will not be discussed, because they are not expected to be significantly impacted by the proposed action or alternatives. These are the mountain lion, golden eagles, prairie falcon, western burrowing owl, mourning doves, chukar, black bear, sharp-tailed grouse, osprey, merlin and long-billed curlew.

### Endangered, Threatened and Sensitive Species

A review of the Threatened and Endangered species lists published in the Federal Register showed that only the bald eagle and peregrine falcon were found to be in the EIS area.

There are no known or suspected breeding pairs of bald eagles in the EIS area. There are, however, a small number of birds (15-20) that use the area during the fall, winter and spring. The main area of use is along the Bruneau Arm of C.J. Strike Reservoir, although sightings have been recorded along the West Fork of the Bruneau River, Battle Creek, the East Fork of the Owyhee River and Deep Creek.

Peregrines, like bald eagles, are a listed Endangered species. No breeding pairs are known in the EIS area and sightings are very rare. Single sightings have been documented from 1971 to 1974 and in 1979.

"Sensitive species" refers to wildlife species which have been officially designated by the BLM and Idaho Department of Fish and Game (IDF&G) through a Memorandum of Understanding. They are species for which there is concern for their continued existence. Although these species are not in as much jeopardy as endangered or threatened species, further population or habitat declines may result in the more restrictive listing. Only the following sensitive species will be mentioned in the EIS: California bighorn sheep, mountain quail, and river otter.

## Mule Deer

Mule deer are the most numerous big game species in the EIS area. There are approximately 1,818,070 acres of mule deer habitat (Map 3-4). Presently there are approximately 2,345 deer using the summer range and 5,075 wintering deer. Mule deer harvest data compiled by Fish and Game suggests that populations are increasing. This increase is in response to restrictive harvest management (shortened hunting seasons and bucks only harvest).

Habitat on both summer and winter ranges is currently in unsatisfactory condition. The 1979-80 BLM range survey indicated that 81% (1,473,600 acres) of the mule deer habitat in the EIS area is in poor or fair ecological condition. These conditions do not provide the quality diet of forbs, grasses, and shrubs required by deer to maintain productivity and survive severe climate conditions. Therefore populations may decline under adverse weather conditions.

A study by Trout and Thiessen (1973), in Owyhee County, indicated existing deer diets are not optimum. Table 3-1 compares these existing diets with what a quality diet should be in a similar area in good ecological condition.

In comparison to sharing ranges in good ecological condition, when livestock and deer are forced to compete for forage on ranges in poor and fair ecological condition, they experience a greater conflict in diet overlap. This occurs because fewer quality forage plants comprise the vegetative community in these lower ecological conditions. In spring, livestock and deer feed on emerging grasses and forbs while in summer and fall consumption of browse increases and grasses and forbs decreases. This becomes a major problem when livestock are permitted to graze in deer wintering areas and reduce the availability of palatable browse needed by the deer.

The 1973 Fish and Game study and the BLM Bruneau range inventory showed that the present condition of ecological sites in the EIS area do not provide the proper mixture of palatable species needed for a quality mule deer diet.

Table 3-1
Existing and Optimum Mule Deer Seasonal Food Diets

| Plant Class | Spring Apr-Jun | Summer Jul-Sept | Fall Oct-Dec | Winter Jan-Mar |
|---|---|---|---|---|
| Existing Diet* | | | | |
| Grass | 65% | 7% | 7% | 5% |
| Forbs | 10% | 8% | 9% | 5% |
| Shrubs | 20% | 77% | 71% | 86% |
| Unidentified | 5% | 8% | 13% | 4% |
| Optimum Diet** | | | | |
| Grass | 40% | 5% | 10% | 5% |
| Forbs | 20% | 50% | 30% | 15% |
| Shrubs | 40% | 45% | 60% | 80% |

* Trout and Thiessen 1973
** From Literature Review

## Antelope

Populations of antelope are scattered throughout the EIS area. Antelope winter, summer and yearlong ranges located in the EIS area are shown in Map 3-5. There are currently 980 antelope summering and 840 wintering in the EIS area.

Herd composition data available indicates that fawn survivial is good through summer. However, populations do not appear to be increasing. Many animals are lost during the fall-winter period. It is suspected that a quality diet is not available during this period.

There are approximately 1,452,000 acres of antelope habitat in the EIS area used by resident and migratory herds. The BLM range survey found approximately 80% of the antelope range is in fair or poor ecological condition.

The saltbush/budsage winter-spring range between the Snake River and foothills in the northern portion of the Bruneau Planning Unit is in poor condition. This area supports the largest number of wintering antelope in the EIS area. Poor condition spring range does not supply the quality diet needed by pregnant does.

Principal pronghorn forage consists of browse throughout the year. Highest use of grasses and forbs occurs during the spring and summer. Native forage species, such as bitterbrush, elderberry, serviceberry, balsamroot, penstemon, lupine, and clover provide high quality supplements to the staple sagebrush diet.

When ranges are in poor condition and forage is limited, competition occurs between all herbivorous animals. However, there is little or no competition between antelope and cattle on ranges in good condition.

Antelope generally use habitat within four miles of water and most of the antelope habitat in the EIS area falls within this four mile limit. These are maximum distances however, and optimum antelope distribution is not being achieved due to limited water in some areas.

### Bighorn Sheep

Bighorn sheep formerly ranged over Owyhee County but were eliminated by the 1920s. Between 1963 and 1966, 38 California bighorn sheep were released into the Owyhee River canyon (western edge of the EIS area). The population has increased and expanded into the EIS area along the Owyhee River, Deep Creek and Battle Creek. At present, there are an estimated 220 animals in this population within the EIS area. Ewe-lamb ratios have been consistently good; generally exceeding 60 lambs per 100 ewes.

In 1967, an additional transplant of 12 sheep was made on Rattlesnake Creek, a tributary of Little Jacks Creek. The population has expanded throughout the Little Jacks Creek drainage and westward into the gulches between Little Jacks Creek and Shoofly Creek. Data collected during June of 1980 showed a ewe:lamb ratio of 110:74 and an estimated population of 100 bighorns. The management objective within this area is to maintain habitat for 100 bighorns.

The bighorn sheep range is used on a yearlong basis. They currently use the area illustrated in Map 3-6. The current condition of bighorn sheep is shown in Table 3-2.

Table 3-2
Bighorn Sheep Habitat Condition

| | Acres of Condition and Percent of Total | | | | |
|---|---|---|---|---|---|
| Use Area | Excellent | Good | Fair | Poor | Disturbed |
| Owyhee-Battle Creek | 611(1%) | 6,619(13%) | 20,904(41%) | 22,731(45%) | 0 |
| Little Jacks Cr | 212(1%) | 20,148(47%) | 16,721(41%) | 4,834(11%) | 812(2%) |
| Total Habitat | 823(1%) | 26,767(29%) | 37,625(40%) | 27,565(29%) | 813(1%) |

Poor habitat separation exists between cattle and bighorns on Battle Creek. Plateaus adjacent to Battle Creek are generally in poor ecological condition and show heavy livestock use. Biologists have noted a downward trend in the number of bighorns found in this canyon. It is suspected that bighorns have moved into the Owyhee River system to avoid interaction with livestock.

Grasses are the staple forage for bighorns during all seasons but are particularly important during spring and summer. Bluebunch wheatgrass comprises a large part of the yearlong diet. Other grasses and shrub species, such as Great Basin wildrye, Idaho fescue, Sandberg bluegrass, bitterbrush and willow make up the rest of the diet. Browse becomes important during fall and comprises the greater part of their diet in winter.

Bighorn use is largely confined to the canyons and adjacent plateaus up to one mile from the canyon rims. Cattle use is generally limited to the plateau areas.

Potential bighorn sheep habitat has been identified on Big Jacks Creek, Shoofly Creek and the West Fork of the Bruneau River. There are 67,000 acres within the canyons suitable for reintroduction of bighorns.

## Sage Grouse

Sage grouse are one of the most important game birds in the EIS area. The Bruneau Planning Unit is the core area for sage grouse production in southwestern Idaho. They are widely scattered in the low and big sagebrush communities. Based upon strutting ground counts, populations have generally decreased in the Bruneau Planning Unit. In 1980, the overall brood size of 2.9 young per brood was the smallest recorded in the 11 year period surveyed. Approximately 20% of the nesting area in the Bruneau Planning Unit is in good ecological condition.

Sage grouse habitat in the Kuna Planning Unit has been encroached on by man and his activities (farming, burning, and livestock overuse). Only 83,600 acres of suitable habitat remains. Nesting areas are predominantly in poor and fair ecological condition. Good condition range provides good sage grouse habitat.

Distribution of sage grouse is shown on Map 2-2. The distribution of nesting habitat is based mainly on locations of strutting grounds. Strutting grounds are natural open clearings surrounded by sagebrush where males gather every year to court females. These areas are important since most females nest within two miles of the strutting grounds (Western States Sage Grouse Committee 1974).

There are approximately 621,975 acres of sage grouse habitat in the EIS area. This acreage includes nesting, brood rearing and wintering areas. It is estimated about 44% is in good ecological condition. The high amount of poor and fair ecological condition illustrates the limited quantity of understory vegetation currently found in the nesting areas. This results in less cover for nesting and lower brood success rates. Sagebrush canopy cover, a critical factor for nesting, is within acceptable limits in these areas.

Meadows make up the most important brood rearing habitat. Although meadows usually maintain at least fair ecological condition, they are often grazed early harming sage grouse habitat needs. Livestock use on these areas often results in an average forage utilization in excess of 90%. This results in less cover to hide chicks from predators and lowers insect production.

The sage grouse wintering habitat contains adequate amount of sagebrush (>20% canopy coverage) to serve the birds need for food and cover. Sagebrush also makes up almost 100% of the winter diet (Patterson 1952).

Water distribution is not optimum for sage grouse in the EIS area. This limits grouse distribution in areas that would otherwise be suitable habitat.

Water projects developed for livestock use often don't supply water during the entire time of need by wildlife. For example: Ant Hill well in the Bruneau Planning Unit has only enough water to charge part of the pipeline at any one time. During mid-summer water is switched to another part of the pipeline. Wildlife attracted to the charged portion of the pipeline early in the season are now left without water. In addition as the water level declines in troughs on the earlier charged portion of the pipeline, they become traps for birds.

## Waterfowl

Four species of geese and 18 species of ducks occur in the EIS area as resident or migratory species. Common nesting species are Canada geese, mallard, pintail, green-wing teal and cinnamon teal.

The Snake River and adjacent habitat is a major production area for Canada geese and ducks. The larger reservoirs and the Owyhee and Bruneau Rivers contribute some additional goose production. Ducks nest adjacent to most reservoirs, stock ponds and major creeks. Although production is small at each of these sites, there are over 2,000 surface acres of water in these ponds and reservoirs. An educated guess, based on information from the wildlife inventory, puts the current number of nesting waterfowl between 2,000 and 4,000 birds.

In the spring, waterfowl in the EIS area depend on adequate cover in the upland areas for nesting (Berg 1956). Broods depend on emergent aquatic and shoreline vegetation for cover and food. Nesting and brood cover are generally in very poor condition in the vicinity of water due to the heavy utilization of these areas by livestock.

## Meadow/Riparian Associated Wildlife

Meadow and riparian habitats are areas adjacent to a drainage or stream having plant species different from those of the surrounding, drier habitat zones. Riparian habitats are characterized by plant species, such as cottonwood, aspen, maple, alder, willow, rose, currant, and many grasses and forbs. Meadows lack tree and shrub species but support many succulent forbs and grasses.

Livestock concentrate in meadow/riparian habitats due to the presence of water, green forage and in the case of riparian habitats, shade. These overused areas exhibit lower vegetation diversity, limited tree and shrub canopy, a high occurrence of undesirable species (cockle burs, cheatgrass and mustards) and inadequate reproduction of desirable plants.

Most wildlife species in the EIS area use riparian habitats disproportionately more than any habitat type available. The structural diversity offered by a tree layer, a shrub layer, and a herbaceous layer provides large amounts of nesting, roosting, hiding, escape and thermal cover for both high densities and diversity of wildlife. Additionally, riparian vegetation provides many important food plants which remain green and nutritious longer than the surrounding upland vegetation. Of the 111 miles of major streams sampled in the EIS area, 24% are in poor condition, 45% are in fair condition and 31% are in good condition.

### Beaver

Beaver are found in most major perennial streams throughout the EIS area, although populations are scattered and generally low. Remnant washed out dams and aspen stumps indicate beaver were once abundant. Beaver depend upon the bark and twigs of riparian shrubs and trees for food. Although they are capable of harvesting trees and shrubs beyond the reach of livestock, this food source is limited if young plants are being suppressed by livestock.

### River Otter

Native river otter are found throughout the EIS area's rivers and major perennial streams. They are common in the Owyhee and Bruneau River systems including major tributary creeks like Deep Creek and Battle Creek. Small or transient populations occur along the Snake River. An adequate food supply (fish, frogs, crayfish, mollusks and insects) and den sites (burrows with underwater entrances) are two key habitat elements for this species. Livestock can affect both of these habitat elements. Depleted riparian zones provide lower amounts of potential prey and fewer beavers, whose vacated dams are used by otters.

### Valley Quail

Native valley quail are common to abundant in the EIS area. Populations experience wide fluctuations which are closely associated to climatic variation. Although climate is an important factor controlling quail populations, habitat condition influences their ability to endure climatic variation (Edminister 1954). A good mix of shrubby and herbaceous vegetation in association with water is essential to the maintenance of good populations. Concentrated use of these habitats by livestock conflicts with the needs of the quail and does not permit optimum population development.

### Mountain Quail

Populations of mountain quail are scattered and quite small in the EIS area. Sources indicate they were very common in the early 1900s and were still common in the northern foothills of the EIS area in the 1950s (Burleigh 1972). Because of low numbers now existing, this species has been classified as a "sensitive species" by BLM and the Idaho Fish and Game Department.

The habitat requirements of mountain quail are little known. In arid areas they are associated with riparian habitats located in the bottom of canyons or steep slopes. The concentration of cattle in the riparian habitats is suspected to be a significant factor affecting the welfare of these birds.

### Birds of Prey

The 482,000 federal acre Snake River Birds of Prey Area (SRBOPA) was withdrawn on November 26, 1980 (Map 2-2). This area, withdrawn from agricultural entry, constitutes the breeding ecosystem for the highest known nesting density of "birds of prey" in North America. The area contains 14 species of birds of prey. The SRBOPA is managed for multiple resource uses and benefits, of which livestock grazing is a major consideration.

All or portions of 13 grazing allotments fall within the withdrawal boundaries. The majority of the area is in allotments 825, 826 and 839 of the Kuna Planning Unit.

Current vegetative types found in the area; annual grass, sagebrush, and winterfat, are important to prey species taken by the "birds of prey". Those prey species which are significantly dependent on grasses are most likely to be affected by the proposed action. Townsend ground squirrels depend heavily on both perennial and annual grasses from late February through early to mid June. Black-tailed jackrabbits eat grasses, forbs and shrubs in early spring but prefer grasses from late spring to early summer (Currie 1963). The raptorial species most affected by the proposal or alternatives are those which depend on these prey species as food. Birds primarily dependent on other prey species would not be significantly impacted to a lesser degree because the proposal would have less affect on the prey of these species.

A detailed description of the resources and management approaches within the Birds of Prey Area is contained in the Snake River Birds of Prey Final Environmental Statement (USDI 1979).

## FISHERIES

There are 26 perennial and 22 major intermittent streams that contain fisheries habitat in the EIS area. In addition there are two minor river systems (Owyhee and Bruneau) and one major river (Snake). The proposal and alternatives would not significantly affect the fisheries of the Snake River and therefore, the Snake River will not be discussed further.

Inventory of EIS streams was conducted in 1979 and 1980 (May to November). Inventory methods utilized can be found in the Bruneau and Kuna URA Step 3.

### Fisheries Habitat Condition

Fisheries habitat condition was measured on streams from adjacent public lands using the following physical factors: 1) high streambank cover (percent shading), 2) low streambank cover (percent bare soil), 3) streambank stability, 4) stream channel stability, 5) amount of sedimentation, and 6) in-stream cover. Many of these factors are related to vegetative cover and soil stability and are key indicators of fisheries habitat condition in desert streams. Criteria for excellent, good, fair, and poor condition rating for each of these six factors is contained in Appendix Table C-1. Fisheries habitat condition is shown on Map 2-3.

Although 457 miles of streams on public lands (420 perennial, 37 intermittant) are capable of supporting fisheries, over one forth (121 miles) is in poor condition (Table 3-3). Many of the streams shown in poor or fair condition are capable of being improved. Fifty-eight perennial miles of the Owyhee River (Main and South Forks) are found in the Garat and "45" allotments. These miles do not support a significant trout fisheries and are not included in calculating total trout numbers in this EIS. They do, however, support a small but growing number of smallmouth bass. Livestock grazing is a major conflicting activity to maintaining an overall good fisheries habitat condition and conflicts have been identified on 52.5 miles of EIS streams (Table 3-3). The major habitat limiting factors as a result of livestock grazing are silt, lack of riparian cover, and lowered water tables. Other fisheries habitat limiting factors in many streams include unstable banks, high water temperatures, lack of pools, trampling and algal mats.

Table 3-3
Condition and Conflicts of Streams Capable of Supporting Fisheries

| Stream Type | Miles of Streams | Stream Miles Under Public Ownership | | Miles Supporting Fisheries Habitat | Stream Condition Miles | | | | Livestock Grazing Conflicts | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Miles | % | | Poor | Fair | Good | Excellent | Miles | % |
| Perennial* | 679 | 420 | 62 | 420 | 86 | 219 | 113 | 2 | 43.7 | 12 |
| Intermittant | 471 | 177 | 38 | 37 | 35 | 2 | 0 | 0 | 8.8 | 21 |
| Total | 1,150 | 597 | | 457 | 121 | 221 | 113 | 2 | 52.5 | |

* Does not include Snake River.

## Water Quality

Aquatic macro-invertebrates are often used as water quality indicators reflecting long term stream conditions. Diversity of macro-invertebrate communities is a good indicator of the amount of community stability in a stream. In addition, biomass of aquatic macro-invertebrates is indicative of the amount of food available to fish and the general productivity of a waterbody. At least 123 species of macro-invertebrates, representing a broad spectrum of habitat preference types are found in the EIS area. A rating system based on the number and diversity of aquatic macro-invertebrates collected at 34 samples sites in 21 EIS perennial streams was used to evaluate overall insect community richness and water quality. Of the 34 sample sites, 20% were in poor, 23% in fair, and 57% were in good condition.

### Fish Populations

The most common and widespread species in EIS streams include (in decreasing order of miles of habitat occupied) large scale sucker, redside shiner, speckled dace, northern squawfish, red band trout and longnose dace. Chiselmouth are common in the Bruneau and Owyhee Rivers.

Cold water game fish are found in the EIS streams and reservoirs. Rainbows and red band trout are found throughout the EIS area. The native red band trout is found in all major perennial EIS streams. Red band trout are rarely over ten inches in length with average adult sizes of five to eight inches in length.

The red band trout has been designated a sensitive species by the BLM and the Idaho Department of Fish and Game. Habitat condition requirements found in desert streams are suitable for the red band trout.

Red band trout population estimates among EIS streams range from 106 to 4,286 per stream mile with an average of 2,043 fish per stream mile. Fisheries inventory information suggest that present red band trout numbers in the EIS area are estimated 915,000.

## CULTURAL RESOURCES

The EIS area lies in the northern portion of the Great Basin culture area. Prehistoric sites in southern Idaho have been dated to 15,000 years B.P. (Before Present). Prehistoric populations conformed to a basic hunting and gathering way of life involving the seasonal movement from higher elevations during the summer to lower elevations in the winter.

A Class II cultural resource inventory was performed in the EIS area by Boise District Office archaeologists during FY 79-80. This inventory involved the field sampling of approximately 7% of the EIS area using stratified random sampling techniques. The following statistics are derived from the inventory and the district and State Historic Preservation Office (SHPO) files.

There are 1,241 recorded prehistoric sites in the EIS area. The majority of these (69.5%) are in good condition. Approximately 3% are in excellent condition, 16.8% are in poor condition and 2.4% have been destroyed. Livestock trampling has negatively impacted 8% of these sites. Cultural Resource Site Condition classes are defined as follows:

Excellent Condition - 76 to 100% of site preserved
Good Condition - 50 to 75% of site preserved
Poor Condition - less than 50% of site preserved

There are 107 recorded historic sites in the EIS area. The majority of these (66.3%) are in good condition. Only 0.9% are in excellent condition, 24.3% are in poor condition and 3.7% have been destroyed. Livestock trampling has negatively impacted 16% of these sites.

Given the standard operating procedures and protective measures identified in the proposed action and alternatives there would not be significant impacts to cultural resources and therefore cultural resources will not be addressed further in the EIS.

## VISUAL RESOURCES

A Visual Resource Management (VRM) inventory was conducted on the EIS area during 1980 and 81. VRM classes were assigned to the area based on scenic quality, accessibility and sensitivity (Map 3-7).

VRM Class I covers 15% of the EIS area and contains lands which have been designated or are being considered by Congress for special protection. Management of these lands is based primarily on natural ecological change; however, it does not preclude limited management activity. The Oregon Trail, the proposed Bruneau and Owyhee Wild and Scenic Rivers and all wilderness study areas are affected by this classification. Areas receiving designation as wilderness or wild and scenic rivers would retain Class I designation. Units not receiving designation would be managed as VRM Class II.

Eight percent of the EIS area is in VRM Class II. This class includes highly scenic areas where management activity should not attract attention. The uplands along the Nevada border, the west end of Mud Flat Road, and the cliffs along the Snake River Birds of Prey Natural Area are in this VRM class.

VRM Class III covers 37% of the area. Management activity may be noticeable but should not dominate the landscape. These areas usually are seen by large numbers of travelers. The largest areas of Class III are along major roads, such as U.S. 51, State Route 78, I-84 Mud Flat Road, and the road to Rowland, Nevada.

VRM Class IV includes flat treeless land generally hidden from public view. Such lands comprise 39% of the EIS area. Management activities such as chaining and seeding may dominate this dull landscape.

Class V covers about 1% of the area. These lands need rehabilitation to restore their visual character which was destroyed by unacceptable cultural modification such as stripping topsoil and vegetation. The 60 mile El Paso gas pipeline right of way is the largest Class V area.

## WILDERNESS

Sixteen areas totalling about 447,000 acres have been identified as Wilderness Study Areas (WSAs). These areas have met the minimum criteria for wilderness as identified in the Wilderness Act of 1964. Approximately 315,500 acres are recommended as suitable for wilderness with the remaining acres recommended as non-suitable for wilderness (Map 3-8). These suitability recommendations will be evaluated in a separate Wilderness EIS scheduled to begin in October 1982.

All of the WSAs are roadless areas that are natural in appearance. All except the Little Owyhee River WSA have outstanding opportunities for primitive recreation associated with diverse landscapes and spectacular canyons. All except Sheep Creek East also have outstanding opportunities for solitude. Topographic features, riparian vegetation, and the lack of outside sights and sounds provide the opportunities for solitude.

In addition to these manditory wilderness characteristics, many of the areas also contain supplemental wilderness values. These are special features of scientific, educational, scenic or historical interest that contribute to the area's overall value as wilderness. Supplemental values identified during the wilderness study process include habitat for sensitive California bighorn sheep, river otter, mountain quail, and red-banded trout. Increase in wildlife numbers or diversity enhances opportunities for a variety of primitive recreation activities. Improvement of riparian habitats also enhances primitive recreation and increases opportunities for solitude. Specific impacts of the Proposed Action and Alternatives on sensitive species; wildlife numbers, and riparian habitats are addressed under wildlife and fisheries.

The wilderness values most vulnerable to irretrievable degradation from grazing management are the scientific and ecological values. Several of the WSAs (see below), have very important ecological/ scientific values which are vulnerable to being adversely impacted by grazing. The preservation of ecological and evolutionary processes functioning outside the influence of man is the most frequently cited scientific value of wilderness (Shute and Shanks 1979). The BLM's Wilderness Study Policy specifically recognizes these values.

Currently, there are no examples of the Salt Desert Shrub ecosystems and less than 35,000 acres of the Sagebrush Steppe ecosytem in the National Wilderness Preservation System.

The Salt Desert Shrub ecosystem within the WSAs is currently in poor ecological condition. Range specialists believe this condition is irreversible and pristine conditions cannot be restored. Sagebrush Steppe vegetation in "good" ecological condition is found in the following WSAs:

| WSA | Acres-good ecological condition |
|---|---|
| a) Big Jacks Creek (111-07) | 15,400 |
| b) Little Jacks Creek (111-06) | 6,050 |
| c) Duncan Creek (111-7b) | 4,900 |
| d) Sheep Creek West (111-36b) | 7,250 |
| e) Owyhee River WSAs (16-49a) | 14,600 |
| TOTAL | 48,200 |

Livestock grazing has been the most significant impact on the Sagebrush Steppe ecosystem in the last 1,000 years (Young, Eckert, and Evans 1979). The sagebrush grass community is not adapted and did not evolve under grazing pressure from large herbivores. Consequently even light grazing on those areas in "good" ecological condition can substantially change the ecological relationships (Stoddart, Smith and

Box 1975). "Good" ecological condition is a term used by range management to denote areas where vegetation is 50 to 75% of what should exist under pristine conditions. Range scientists believe these Sagebrush Steppe areas in "good" condition have the potential to naturally improve to a pristine condition. The term "ecological condition" as used throughout this section is synonymous with the term "range condition" used in other sections.

The numbers of livestock permitted to graze in designated BLM wilderness would remain at the approximate levels existing at the time an area enters the wildernes system. If land management plans reveal conclusively that increased livestock numbers or animal unit months (AUMs) could be made available with no adverse impact on wilderness values (such as plant communities, primitive recreation, and wildlife populations or habitat), some increases in AUMs may be permissible (BLM Wilderness Management Policy 1981).

The lack of concentrations of large herbivores under natural conditions indicates that increased livestock may have an adverse effect on areas included in the wilderness system as representative of this ecosystem under natural conditions. Approximately 48,000 acres (1% of the Boise District) have been identified as having the best potential for preservation as representation of this ecosystem. Protecting these remnants of the Sagebrush Steppe from increased grazing would hold open future options for scientific and ecological research of these lands under near natural conditions.

## RECREATION

Recreation opportunities directly affected by the proposed action and the alternatives include hunting, fishing, visitation of the Oregon Trail, and primitive outdoor recreation opportunities. The latter is addressed within the wilderness portion of the EIS because most areas providing primitive opportunities have been designated as wilderness study areas.

Hunting, a primary use activity was estimated at 123,007 hunter days in 1978 within the Bruneau Resource Area (Table 3-4).

Hunting use is estimated to increase 68% between 1978 and 2000 for southwestern Idaho according to the Idaho Outdoor Recreation Plan - 1977. With favorable conditions, the 1978 hunting use of 123,000 hunter days could increase to almost 207,000 hunter days by the year 2000. Fair to excellent fishing resources are available; however, public access to many of the streams is restricted by lack of roads and rough topography. If increased hunting and fishing pressures are not met with increased wildlife and fish populations, success ratios, harvests, and the existing quality of the experiences would suffer.

There are about 50 miles of Oregon Trail ruts within the EIS study area; over half of which are on BLM lands. Remnants of two historic routes associated with the Oregon Trail, the Goodale Cutoff and the Kelton Road, are also found (Map 3-7).

Table 3-4
1978 Hunting Use
Bruneau Resource Area*

| Species | Hunter Days |
|---|---|
| Big Game | |
| Mule Deer | 11,524 |
| **Pronghorn Antelope | 138 |
| **Bighorn Sheep | 48 |
| Subtotal | 11,710 |
| Upland Game | |
| Sage Grouse | 4,344 |
| Chukar | 16,916 |
| Hun | 7,263 |
| Quail | 12,302 |
| Dove | 1,774 |
| Pheasant | 26,026 |
| Cottontail | 2,001 |
| Subtotal | 70,626 |
| Waterfowl | |
| Canada Goose | 4,911 |
| Duck | 35,670 |
| Subtotal | 40,671 |
| Total | 123,007 |

Source: Idaho Department of Fish and Game.
* Owyhee R.A. portion of study area not included.
** Permit hunting only.

## ECONOMICS

The economic region for this EIS was determined to be Elmore and Owyhee Counties, Idaho. Ada County, Idaho was excluded since the metropolitan nature of the county would distort the data and comparisons being made.

### Income

Total regional income for 1979 was $152 million. Farm income was $25 million or 17% of the total (Bureau of Economic Analysis 1981). Total livestock (meat animals) income was $15 million or 60% of farm income and 10% of total regional income. This is based on the assumption that the relationship between farm and livestock income is the same as the relationship between farm and livestock receipts. In 1979, livestock receipts accounted for 63% of farm income (Bureau of Economic Analysis 1981).

To determine what impact the proposed action and alternatives would have on rancher income, ranch budgets were prepared (Economic and Statistics Service 1981). These budgets were adjusted by replacing the livestock prices used with the five year weighted average for livestock prices. Budgets were prepared for three groups of cattle operators. Sheep operators were not budgeted seperately due to the small number of sheep permittees in the area. The results are shown in Table 3-5. The full budgets have been reproduced in Appendix D along with an explanation of the process used. The table shows that income generated by the permittees' ranches is about $1.8 million (before accounting for return to land). This represents 1% of the total regional income, 7% of the regional farm income, and 12% of the regional livestock income.

Table 3-5
Returns From Brood Cow Operations

| Group | Number of Permittees | Returns Above Cash Cost | Total Net Income |
|---|---|---|---|
| 1. 0-99 brood cows | 13 | $ 6,237 | $ 81,081 |
| 2. 100-499 brood cows | 31 | $13,785 | $ 427,335 |
| 3. 500+ brood cows | 35 | $37,564 | $1,314,740 |
| Total | 79 | | $1,823,156 |

Source: USDA, Economics and Statistics Service and BLM.

## Employment

Total regional employment for 1979 was 13,961. Farm employment accounted for 2,759 or 20% of the total (Bureau of Economic Analysis 1981). That portion of farm employment attributable to the livestock industry is not identifiable.

## Capital Position

As early as 1925, it was recognized that the annual value of the federal grazing privilege was being capitalized into rancher property. "It is argued that long use of the range in connection with the early settlement of agricultural lands has resulted in capitalizing the values of public pasturage as part of the value of the ranch..." (USDA 1925).

A report published by the Utah State University Experiment Station stated, "there was nothing illegal or unethical in the fact that grazing permits took on a value; ranchers just reacted to an economic situation that was created by government policy. Permit values rose because ranchers who have grazing permits were capturing economic rents in the form of low cost grazing; i.e., the grazing fee and recognized non-fee costs did not equal the value of the grazing to ranchers. Thus, the authorization to use the federal lands and the associated economic rents were capitalized into rancher-owned assets. This value could show up either as a permit value or as an increased value of the commensurate property" (Nielson and Workman 1971).

BLM's position on permit values is based on very explicit language in Section 3 of the Taylor Grazing Act of 1934 which states "so far as consistent with the purposes and provisions of this Act, grazing privileges recognized and acknowledged shall be adequately safeguarded, but the creation of a grazing district or the issuance of a permit pursuant to the provisions of this Act shall not create any right, title, interest, or state in or to the lands." Thus, any capitalized value associated with grazing permits has no legal basis, and, as a result, a rancher has no legal recourse to obtain compensation for loss of this value.

## SOCIAL CONDITIONS

Conflicts related to public land and grazing management are common. Existing grazing allocations are favorably viewed by members of the community whose economic livelihood and security are derived from cattle or ranching operations. These same allocations are seen as potentially harmful by those whose primary interest is aesthetics or recreation. These kinds of conflicts are likely to become more intense in the study area as the area continues to experience growing popularity as a recreation area.

General social values are expressed through satisfaction with community and neighborhood, educational facilities, health services, economic climate, recreation opportunities, religious institutions, etc. Social well being is the degree or sense of satisfaction an individual feels. Individuals develop positive or negative feeling about their well being. This revolves heavily around the individuals living environment and economic condition.

There are two distinct groups in the area whose social well being is affected differently by their economic situation: 1) those whose livelihood is derived from ranch related activities, and 2) those who derive their livelihood from non-ranch activities. Attitudes of individuals whose economic situation can be substantially changed by BLM decisions are understandably uneasy and may not have strong feelings of social well being.

A ranching lifestyle has been described as "a family oriented lifestyle which provides a good quality of life for those who choose it". With high expenses and low beef prices in the 1970's, ranchers have been subjected to economic and social pressures that have threatened continuation of this very way of life.

Economist Schultz (1970) found that the majority of western livestock operators interviewed considered ranching a way of life before they evaluated it as a profit making enterprise. Further, it was felt that rural living was "the only way to go". Ranchers contacted in the study area displayed these feelings. They are concerned about their ability to continue their way of life in the face of inflation, complex technology and governmental regulations.

Beyond these lifestyle oriented concerns, people seem to feel that the quality of life in the study area is fairly good.

# CHAPTER 4

# ENVIRONMENTAL CONSEQUENCES

## INTRODUCTION

This chapter analyzes the environmental consequences of the proposed action and all alternatives. Impacts are analyzed for those environmental elements predicted to be significantly impacted by implementation of the proposal or alternatives. Based on the analysis, no significant impacts are predicted to occur on the following environmental elements: Climate, Topography, Minerals, Geology, Air Quality, Threatened and Endangered Plant and Wildlife Species, Cultural Resources, flood plains, or prime or unique farmlands.

## ASSUMPTION AND ANALYSIS GUIDELINES

1) The Bureau of Land Management (BLM) would fund its share of the improvements required to implement the proposed action or alternatives within the stated time frame.

2) The necessary manpower would be furnished by and to the Boise District, and a rigorous effort would be made to completely carry out the monitoring program.

3) The design criteria and standard operating procedures described in the description of the proposed action and alternatives would be adhered to.

4) The impact analysis assumes that the potential acreage identified for land treatment would be completed even though on an individual allotment basis, acreages treated may be constrained by criteria designed to protect wilderness, wildlife, aesthetics, watershed or other values.

5) The impact analysis assumes that the initial and 20 year forage allocations would be achieved based on the assumption that water developments would be completed by the end of the 5-year phase in implementation.

6) The response of various resources to grazing management systems assumed that a limited level of grazing deferment would be periodically applied. Since grazing systems, when developed, may have more deferment or rest, adverse impacts identified in the analysis may be lessened and beneficial impacts may be increased.

7) For purposes of analysis, long-term impacts are those that would occur in 20 years.

# THE PROPOSED ACTION

## VEGETATION

### Vegetation Types and Cover

The present vegetative condition, particularly the amount of desirable grasses and forbs present, would largely determine how the existing vegetation would respond to different types of grazing management. The proposed action would allow vegetation to improve in composition and cover where the potential exists. Perennial grass composition would generally increase where a remnant population has persisted and been allowed to improve in vigor. Plant associations should change from shrub dominated to those where forbs and perennial grasses make up a significant percentage of the vegetation.

Ground cover is not expected to increase dramatically with the proposed action; however, the quality of ground cover in the form of increased perennial grasses is expected to increase.

### Riparian Vegetation

Cattle normally graze heavily on bottomlands near water before moving on to steeper upland country (Phillips 1965). There are numerous references (Behnke 1977, Ames 1977, Hormay 1976) which come to the same conclusion; little or no vegetation improvement in the riparian plant community can be expected regardless of the type of grazing management system implemented. If riparian areas are expected to improve they must be fenced to exclude livestock.

Under the proposed action, special riparian management or grazing exclusion is proposed for 278 perennial stream miles. If these areas are fenced, the riparian vegetation described above is expected to improve to good and excellent condition on these areas. Development of water facilities, management fences, and land treatment projects would aid in reducing some of the livestock pressures on the remaining riparian areas. However, livestock would still tend to concentrate in these areas resulting in no significant improvement of riparian vegetation.

### Condition and Trend

The proposed action would benefit range condition and trend. Allotments dominated by poor range condition and low productive range sites would have less potential for improvement and an anticipated slower rate of recovery. This situation exists on aproximately 745,000 acres. Although some improvement is expected, these areas are predicted to remain in poor condition because: 1) average annual precipitation is less than ten inches, 2) the presence of key understory species is inadequate to provide satisfactory reproduction, 3) soils have restrictive salt and depth limitations, and 4) there is competition with undesirable species. Improvement in range condition has been documented as very slow on similar sites in Colorado (Turner 1971) and northern Utah (Rice and Westoby 1978). Allotments with significant acreages of fair and good condition range would have a greater potential for improvement and an anticipated faster recovery rate, because of the presence of key species in sufficient numbers and vigor for successful reproduction.

Thirteen range sites, representing approximately 70% of the EIS area, were judged to have the potential of improving in condition class under the proposed grazing management. Criteria used to select these range sites included: 1) average annual precipitation of at least 10 inches, 2) sufficient key understory species to provide for improvement, and 3) soils without restrictive salt and depth limitations. In Montana, eight vegetative types improved considerably in range conditions as a result of intensive livestock-management practices (Bransom and Miller 1981). Precipitation averaged 12.4 inches and soils were generally not limiting in this study. Studies in southern Idaho indicate that rotational grazing and spring deferment are effective methods of maintaining range in satisfactory condition or improving range in unsatisfactory condition (Pechanec and Stewart 1949).

Some 442,803 acres of poor condition range, in these 13 range sites, was predicted to go to fair condition and 292,437 acres of fair condition range was predicted to go to good condition. On allotments where initial forage reductions are proposed, all the acreage occurring within these sites was predicted to improve one condition class. On allotments where an increase in initial livestock use is proposed, 20% of the acreage within these sites was predicted to improve. It did not seem logical to predict more than a 20% improvement in condition class acreage until the proposed increase in stocking rates is evaluated through monitoring. There are numerous references (summarized in Stoddart, Smith and Box 1975) to substantiate the assumption that reducing livestock numbers to proper stocking levels would result in improved range condition and increased forage production.

Improvement in range condition on allotments with large areas in poor condition is expected even though some of these allotments would receive increased livestock use. This is because the stocking rates on all ranges, including those in poor range condition, are based on proper livestock use levels. Much of the forage increases in these allotments are derived from increased water development on unwatered areas or excess forage available on portions of the allotment which are currently in fair or good condition.

None of the currently good condition range was predicted to improve to excellent condition within 20 years. Apparent range trend in good condition is currently static and the grazing management as described in the proposed action would maintain this good condition.

Implementation of various structural developments and land treatments would improve livestock distribution and utilization patterns. Obtaining uniform livestock distribution on cattle range is a major management problem (Phillips 1965). Poor grazing distribution can cause great difficulty in improving range condition even when numbers of livestock are in balance (Johnson 1965).

Land treatments are scheduled for areas which are in poor to fair condition (Table 2-3). Vegetative manipulation projects, such as chaining, spraying, burning, plowing, etc. would significantly alter the species composition of that area. Land treatment projects would in the short-term greatly reduce native shrubs and replace them with highly palatable native and introduced grasses and shrubs. In the long-term, native shrubs would gradually reestablish in the area. Maintaining land treatment projects by chemical spraying, burning or chaining would greatly reduce reinvading brush while generally not harming grasses.

Based on the above analysis, the acres within each condition class in 20 years would be as follows:

| | Poor | Fair | Good | Excellent | Treated |
|---|---|---|---|---|---|
| Present: | 1,278,367<br>(54%) | 448,698<br>(19%) | 334,608<br>(14%) | 4,108<br>(<1%) | 313,233<br>(13%) |
| 20 Years: | 835,564<br>(35%) | 556,725<br>(24%) | 627,045<br>(26%) | 4,108<br>(<1%) | 355,572<br>(15%) |

Range condition by allotment is shown in Appendix Table B-2.

## Production

Proper stocking levels, implementation of grazing management, and insuring proper utilization of key forage plants would have beneficial effects of increasing forage production over present levels. Range improvements, such as water developments and fencing would improve livestock distribution patterns and increase the quantity as well as quality of available forage.

Land treatment projects would also increase range productivity. Nielson and Hinckley (1975) report that yields from a loam range site produced 221 pounds per acre air-dry forage before spraying and 842 pounds per acre air-dry forage after spraying. In the Snake River Plains of Idaho, forage production was more than doubled by controlled burning followed by correct grazing (Pechanec and Stewart 1944). Areas which are planned for brush control and reseeding are currently producing below their potential. Pechanec et. al. (1954 revised) found on ranges needing reseeding, the carrying capacity was increased five to twelve-fold over pretreatment values.

Increases in livestock forage production through grazing management were determined by first determining the amount of increased production that would result on individual range sites if they improved from one condition class to another. This was determined by averaging clip plot data collected during the soil-vegetation inventory. The increased production for each range site was then multiplied by the acreage of that site that was predicted to improve from one condition class to another. Increases in grass forage production for the 13 range sites, which have potential for improvement, ranged from zero to 156 pounds per acre, depending on the range site and the condition class. Range site descriptions, including production data, are available at the Boise District Office.

Total forage production and use in 20 years would be as follows:

| Initial Forage Production | Increased Above Initial Forage Production (AUM's) | | | Total Forage Production | Forage Not Allocated | Wildlife Allocation | Livestock Allocation |
|---|---|---|---|---|---|---|---|
| | Grazing Management | Brush Control | Brush Control and Seeding | | | | |
| 210,479 | 30,527 | 29,392 | 12,846 | 283,244 | 11,126 | 2,333 | 269,785 |

Allotment specific production data is presented in Appendix Table B-3. Forage not allocated is due to lack of water and conflicts with wilderness recommendations. These are discussed in Appendix B.

## SOIL AND WATER RESOURCES

### Soil Stability

Upland soil stability on high and critical erosion hazard areas is not expected to change significantly since total ground cover would remain about the same over the next 20 years. Soil compaction would result on these areas when grazing occurs on soil with a high moisture content. Early spring turnout dates (March-April) would increase the occurance of soil compaction.

Soil stability of streambanks and riparian areas would improve significantly on the 153 miles of stream which would be managed to improve fisheries habitat condition. These stream miles represent about 26% of the perennial and major intermittant stream miles on public lands in the EIS area. Soil stability of stream banks would improve on a portion of the 125 miles of canyonland that is reserved for bighorn sheep, river otter and other riparian associated wildlife, since livestock grazing is currently present on only a portion of these areas. Stream miles on areas accessible to livestock (approximately 49% of the public stream miles) would show a significant increase in soil disturbance due to a predicted 44% increase over five year average use in 20 years. This increase in AUM's means that the average stocking rate over the entire EIS area would increase from 12.5 acres per AUM to 8.7 acres per AUM in 20 years. This does not take into account areas unsuitable for grazing or areas where grazing is excluded in favor of other uses. This increased stocking rate when considered with the tendancy of livestock to congregate in riparian areas would result in soil surface disturbance and heavy utilization of riparian vegetation.

## TERRESTRIAL WILDLIFE

### Mule Deer

The allocation of forage for mule deer would benefit the population by slightly reducing the competition for forage on range in poor and fair condition. Proper stocking levels, implementation of grazing management, and proper utilization of key forage plants should also benefit mule deer. A gradual improvement in mule deer diet would result as range conditions improve.

The proposed action would achieve the objective set for mule deer provided the guidelines described in the proposed action for utilization, cover requirements, and grazing system development are followed.

Proposed reservoirs and pipelines would benefit mule deer distribution in areas currently lacking adequate water sources. Improved riparian habitat on streams receiving special management or grazing exclusion should increase forage quality and should also provide better cover for mule deer along these streams.

Range treatment of dense stands of big sagebrush in poor condition would cause an increase in grass and forb production, and improved plant composition. Valuable edge would also be created, benefiting mule deer.

New fence proposed within mule deer habitat would present an additional hazard to deer. However, the impact on the population is considered slight because these fences would incorporate designs to facilitate passage.

Range condition in unfenced meadows and riparian habitats, important as mule deer fawning areas, is expected to make little improvement. Livestock would continue to concentrate in these areas even with reduced stocking rates, utilization limits and grazing systems.

### Antelope

Proper stocking levels, implementation of grazing management, and proper utilization of key forage plants would benefit antelope habitat. However, current population levels would not change significantly. This would be due primarily to competition on the spring and summer ranges. The winter/spring range between the Snake River and foothills in the northern portion of the Bruneau Planning Unit is not predicted to improve from poor condition with range management. This winter/spring range supports the majority of the wintering antelope population. Spring grazing by livestock on this saltbush/budsage habitat removes the limited nutritious herbaceous vegetation needed by does and fawns. Heavy cattle grazing on pronghorn spring and summer ranges prior to mid-May almost guarantees a high degree of dietary overlap (Salwasser 1980).

In addition to this problem, range now in excellent or good condition, which has provided a haven for antelope, would now be impacted by livestock attracted to the new water developments.

Riparian zones and meadows, important antelope summer use areas, not proposed for fencing to protect from livestock use, would remain in poor and fair ecological condition. Competition between cattle and antelope would continue on these areas.

Adverse impacts from vegetation manipulation are not expected to occur because of coordination measures described in the proposed action and accepted multiple use recommendations in the Management Framework Plan (MFP). Proposed manipulation of dense stands of tall sagebrush would open up areas for antelope. Such treatments would reduce shrub competition and allow improvement in species diversity, species composition and resultant forage quality. The addition of new fence within antelope habitat would increase the hazard to antelope in spite of adherance to BLM specifications.

Overall, the proposed action would cause the current population to remain near present population levels.

## Bighorn Sheep

The proposed action would generally be beneficial to bighorns.

One adverse impact would come from the proposed Jacks Creek pipeline. Although the pipeline is outside the bighorn habitat boundary, it would provide water for livestock and thus allow them to forage at least a mile into bighorn habitat. Approximately two to three square miles of bighorn habitat east of Rattlesnake Creek would be available for livestock use. Five to 10 bighorn sheep may be displaced by this use. The proposed pipeline would not comply with the proposed action stipulation to "Maintain a separation of use between cattle and bighorn by not developing livestock water sources within bighorn habitat unless the potential adverse impacts to bighorn can be avoided or mitigated."

The areas overused by livestock along both sides of Battle Creek, within bighorn habitat, would continue to decline if the season of use and stocking rate are not adjusted. Range improvement information in this alternative is not specific enough to predict whether the needed habitat improvement would occur. The overall livestock reduction on the Big Springs Allotment on the west side of Battle Creek is 12%. Available information does not indicate if the reduction is to come off the deteriorated areas along Battle Creek. If this area does not improve the entire population (estimated to be 65 animals) may be lost.

If the Battle Creek habitat improves, the bighorn sheep population objectives would be met for the EIS.

## Waterfowl

The proposed action would affect waterfowl populations through the impacts of livestock use of emergent, shoreline and upland vegetation and the impacts of livestock trampling on nest sites. Since waterfowl usually nest near stock ponds and cattle tend to concentrate near water, impacts on habitat around existing reservoirs and ponds would be similar to present conditions.

New reservoirs of greater than one surface acre would be fenced and thus be of great benefit to waterfowl. It is expected though that only a few reservoirs would be this size. The proposed 235 new reservoirs should provide additional waterfowl habitat. Even those reservoirs not fenced should serve as resting areas for resident and migratory waterfowl.

It is expected that there would be a very insignificant increase in waterfowl nesting due to the small number of reservoirs actually fenced.

## Sage Grouse

Proper stocking levels, implemention of grazing management, and proper utilization of key forage plants should benefit sage grouse habitat.

Minimal improvement is expected of key brood areas. Livestock would continue to make use of these unfenced meadows and riparian areas.

Sage grouse nesting habitat in good condition, 20% in the Bruneau Planning Unit, which previously had only slight use by livestock would now be impacted by increased livestock use. Range condition improvement on poor and fair condition nesting areas may balance impacts to good condition nesting areas.

Reservoirs and pipelines proposed in sage grouse habitat would provide additional sources of water and improve grouse distribution.

Proposed reservoir fencing would increase vegetative cover, insect biomass and provide quality brood habitat. Fencing of riparian zones and springs would provide the same benefits.

Range treatments in sage grouse habitat is not expected to create adverse impacts due to coordination measures, and standard operating procedures described in the proposed action and multiple use recommendations accepted in the MFP.

Early livestock grazing in sage grouse nesting and brood rearing habitat can cause nest disturbance and removal of succulent forbs highly important to young sage grouse. When chicks are four to eight weeks old their diet consists of about 75% forbs and 15% sagebrush leaves (Savage 1969). Therefore, a rapid removal of forbs by livestock on spring and summer ranges may have a substantial adverse impact on young sage grouse, especially where forbs were already scarce in the composition (Call 1974). In May adults also shift to forb dominated diets. Twenty-one allotments in the proposed action have turnout dates that conflict with sage grouse needs for succulent spring forbs (Table 4-1). Population levels would remain at current levels.

Table 4-1
Early Turnout Dates Impacting Sage Grouse
Spring Forb Needs (by Allotment)

| Turn Out Dates | | |
|---|---|---|
| March 1 | March *15/16 | April 1/16** |
| 629 "45" | *524 Garat Individual | 584 Garat |
| 636 Roaring Springs | 803 Big Springs | 801 Castle Creek |
| 840 Strickland-Hall-Yates | 805 Riddle | 802 Battle Creek |
| 841 Buckhorn | 808 Northwest | 806 Pole Creek |
| 842 M & L | 809 Center | **810 Scotts Table |
| 843 Simplot | | 814 Long Tom Subunit |
| 844 Tindall & Sons | | 818 Ditto Creek |
| 845 Antelope Creek | | |
| 846 Alzola | | |

## Meadow/Riparian Associated Wildlife

Riparian vegetation and habitat condition would improve on those streams and canyon areas that would be fenced. The increase in herbaceous and shrub cover provided by this change is expected to greatly benefit big game, valley quail, mountain quail, small mammals, passerine birds, beaver and river otter.

The protected stream miles are expected to improve to good ecological condition. New tree reproduction in these areas would eventually provide habitat for hawks, particularly Cooper's and sharp-shinned, and owls (great horned, long eared, and screech).

A total of 153 public stream miles would be managed for improved stream condition through fencing, juniper structures, etc. An additional 125 miles of stream canyons would be protected with gap fences. This is 47% of the total public stream miles in the EIS area.

Fencing has been shown to be the most effective method to improve overgrazed riparian zones. Vegetation in certain areas, such as meadows and drainage ways are invariably closely utilized under any stocking rate or system of grazing. Where this is the case, about the only way to preserve the values is to fence the area from grazing (Hormay 1976).

The remaining 319 stream miles are expected not to change or provide only slight improvement to riparian associated wildlife.

Reservoirs and spring developments proposed to be fenced, would increase vegetative diversity and subsequently provide a small amount of high quality habitat, creating population increases for quail, small mammals, and passerine birds.

## Birds of Prey

Ranges within the Birds of Prey area would remain in poor or fair condition and would have a substantial proportion of cheatgrass in the plant community. Reliance on cheatgrass production to sustain the proposed levels of grazing should pose no problems in years of "average" or better forage production. However, in years with below normal production, adverse impacts may occur. Cheatgrass is a mainstay in the diet of Townsend ground squirrels, a primary prey species for the birds of prey. Jackrabbits also feed extensively on grasses in spring and early summer. However, sufficient data is not available to predict the impact of the proposal on jackrabbit populations because of the presence of other population determining factors.

Townsend ground squirrel reproduction is tied to the availability of sufficient quantities of succulent forage to enable both production of young and accumulation of body fat reserves for estivation and hibernation. If winter and spring precipitation is not sufficient to produce abundant green forage for both life functions, the ground squirrels respond by suspending reproductive efforts, as documented in 1977, a drought year. Consequently, the reproduction of the birds of prey, primarily prairie falcon, is diminished because of limited ground squirrel production and availability.

The level of ground squirrel reproduction is determined within the first month after emergence from estivation (late February to early March) and is linked to adequate initial growth of grasses. On livestock winter ranges where stock are removed prior to spring growth, weather is one primary factor that would determine the amount of forage available for prey species. Therefore, winter livestock grazing should have limited impacts on prey production or building of body reserves (Table 4-1). An exception exists in years of delayed spring growth when residual grasses from the previous year would serve as the primary available forage for prey species.

On spring ranges, where all turnout dates occur on or after April 1, impacts would vary from none to significant depending on plant growth/stocking rate combinations (Table 4-2).

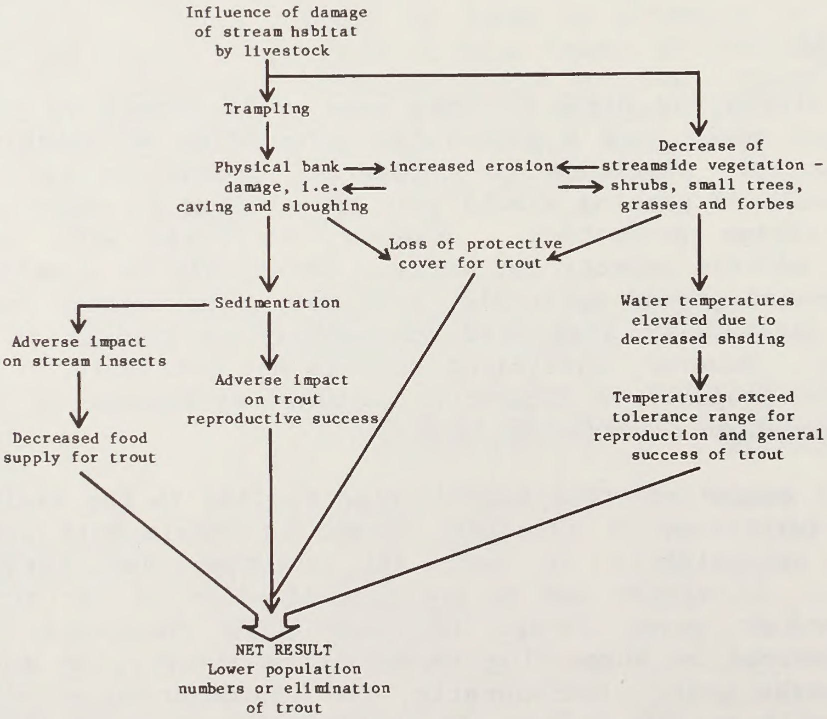
## FISHERIES

### Fisheries Habitat Condition

The majority of fisheries habitat is confined to desert streams where riparian vegetation is the key factor associated with water quality and fisheries habitat condition. Therefore, changes in fisheris habitat condition and water quality generally parallel changes in riparian vegetation.

Impacts of livestock grazing on the acquatic ecosystem are shown in Figure 4-1.

Figure 4-1
Summary of Livestock Impacts on the Aquatic Ecosystem


Influence of damage of stream hsbitat by livestock
Trampling
Decrease of streamside vegetation - shrubs, small trees, grasses and forbes
Physical bank damage, i.e. caving and sloughing
increased erosion
Loss of protective cover for trout
Sedimentation
Water temperatures elevated due to decreased shsding
Adverse impact on stream insects
Adverse impact on trout reproductive success
Temperatures exceed tolerance range for reproduction and general success of trout
Decreased food supply for trout
NET RESULT
Lower population numbers or elimination of trout

Source: Armour (1977)

## Table 4-2
## Impacts to Birds of Prey

| Weather | *TGS Reproduction | Impact from Grazing | Effect on Birds of Prey from Grazing Impacts |
|---|---|---|---|
| "Normal Precip" Plant Growth Normal | "Normal" | None | None |
| Definite Drought | Suspended | Competition for forage necessary to rebuild adult TGS fat reserves for estivation-hibernation. | N/A |
| Above Normal Precip. | Normal | None | None |
| Sub-Normal Precip. Plant Growth 50% of Normal | Normal-Slightly Reduced | None up to April 1. If stocking rate remains at proposed action levels, significant after April 1 since a "normal" level TGS population would need adequate forage to build body reserves but livestock would remove a substantial portion of available production. This would adversely affect the squirrels ability to sustain a long estivation/hibernation, particularly if the competition year forage cures early and is followed by a long winter. | Normal - Slightly Reduced Reproduction |
| Prolonged winter where cheatgrass growth does not begin until March 15 or later. | Undetermined | Strong competition for initial forage growth, perhaps sufficient to impede TGS reproduction and/or rebuilding of body reserves. | Possible Reduced Reproduction |

* TGS - Townsend Ground Squirrel

The proposed action would reverse these impacts on many stream miles. The greatest improvement would occur on areas where improving fisheries habitat condition is the primary management objective.

Within the EIS area, 74% (89 miles) of perennial and intermittant stream miles identified in poor habitat condition are recommended for improvement measures. Twenty-nine percent (64 miles) of perennial and intermittant stream miles identified in fair condition are recommended for improvement measures. Livestock exclusion (fencing) is anticipated on 89 perennial stream miles and 18 intermittant stream miles while intensive livestock management is anticipated on 27 miles of perennial streams and 19 miles of intermittent streams. Exclusion through fencing has been shown to be the most effective method to improve riparian vegetation and fisheries habitat condition. It is assumed that necessary management practices including grazing exclusion, if necessary, would be undertaken to assure fisheries habitat condition improvement on stream miles identified for fisheries habitat improvement.

Stream rehabilitation practices including placement of juniper structures for bank stabilization, rock placement in streams to reduce or rechannel flow velocity and create pools, and seedings/plantings of riparian mixtures are planned on 20.6 EIS stream miles.

With the anticipated livestock exclusion, periodic rest, and management practices in riparian ecosystems fisheries habitat condition is expected to improve. Those miles in fair condition without protection of either fencing or livestock management are expected to decline in condition between the 10th and 20th year. Fisheries habitat condition on 457 stream miles is expected to improve as shown in Table 4-3.

Table 4-3
Fisheries Habitat Condition - Proposed Action
(miles)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 121 | 221 | 113 | 2 |
| 3-5 | 135 | 193 | 127 | 2 |
| 10 | 88 | 162 | 205 | 2 |
| 20 | 137 | 113 | 186 | 21 |

## Water Quality

Since water quality condition is closely associated with fisheries habitat condition, any improvements in riparian habitat would subsequently result in improved water quality.

Water quality and quantity would be most beneficially impacted on fenced stream miles. With livestock exclusion, vegetative cover would increase to site potential. Silt load decreases, narrowing and deepening of stream channels, and deepening of pool areas should follow. As these habitat condition factors improve to good along these streams, more uniform stream flows would follow. Chemical constituents which are at levels limiting to trout during low flow periods (turbidity, water temperature, nitrogen ammonia, and percent oxygen saturation) should become less limiting to trout populations.

Overall water quality and quantity conditions for trout is expected to improve on 21 streams (Table 4-4).

Table 4-4
Water Quality/Quantity Improvement - Proposed Action
(in percent)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 20 | 23 | 57 | 0 |
| 3-5 | 18 | 20 | 62 | 0 |
| 10 | 8 | 12 | 50 | 30 |
| 20 | 2 | 10 | 29 | 58 |

### Fish Populations

With proposed improvements in fisheries habitat condition and water quality, fish populations are expected to increase. With increases in water depth, pooling, and stream bank vegetation more fish food organisms would become available. The initial result would be increased population numbers. As the habitat continues to improve, increased numbers of larger sized fish would be present and sub-adult trout would play a larger role as prey for the larger fish. Therefore, trout numbers would decline between the 10th and 20th year.

With proposed improvements, the following changes in population numbers are projected:

In 3 to 5 years - .13% decrease
In 10 years - 13% increase
In 20 years - 5% decrease

Total - 8% increase

Population projections are based on current population levels in stream segments in good condition.

## VISUAL RESOURCES

Project development would have varying levels of impacts on visual resources. Table 4-5 shows which projects may exceed the desired contrast rating for each VRM class. Pipelines, catchments and land treatments in juniper areas would have the most adverse impacts of the proposed developments.

Table 4-5
Project Development Impacts on Visual Resource Classes

| Project | Major Contrasting Element | Feature With Highest Contrast | Impact Level |  |  |  |
|---|---|---|---|---|---|---|
|  |  |  | Class I | Class II | Class III | Class IV |
| Multiple Pasture Grazing System | Line, Color | Vegetation | Low | Low | Low | Low |
| Range Improvements |  |  |  |  |  |  |
| Spring Development (w/overflow returned to stream) | Form, Color | Structure | Low | Low | Low | Low |
| Reservoir (with fencing & planting) | Line, Form | Land/Water Body | Low | Low | Low | Low |
| Water Trough | Color | Structure | Low | Low | Low | Low |
| Fence (no white tops) | Line | Structure | Low | Low | Low | Low |
| Pipeline (includes maintenance road) | Line | Vegetation | High | High | High | Low |
| Catchment | Form, Color | Land/Water | High | High | High | Low |
| Seeding (drilled) | Line | Vegetation | High | Low | Low | Low |
| Vegetation Manipulation |  |  |  |  |  |  |
| Burning Juniper | Line, Color, Texture | Vegetation | High | High | Low | Low |
| Chaining Juniper | Line, Color | Vegetation | High | Low | Low | Low |
| Spraying Juniper | Line, Color, Texture | Vegetation | High | High | High | Low |
| Burn sage | Line, Color | Vegetation | Low | Low | Low | Low |
| Chain, beat, or mow sage | Line, Color | Vegetation | High | Low | Low | Low |
| Spray sage | Line, Color, | Vegetation | High | High | High | Low |

Low - potentially acceptable projects.
High - projects having adverse visual impacts which normally exceed the desired contrast rating for the area.

Increasing AUM's would reduce areas of quality riparian and meadow scenery, especially near Mud Flat Road and the Nevada border. Shrub cover would be reduced throughout the area. Protection of approximately 287 miles of riparian vegetation through special riparian management measures or grazing exclusion would have an immediate and positive impact on the stream and riparian scenery.

The Jacks Creek pipeline may displace a portion of the bighorn sheep herd which is a valuable scenic asset to the area.

## WILDERNESS

Included in the Proposed Action is a stipulation to preserve wilderness characteristics and values on 315,500 acres that have been recommended as "suitable" for wilderness. About 144,000 acres currently within WSAs have been recommended as "unsuitable" for wilderness in the preliminary land use plan. No effort has been made in the Proposed Action to protect the wilderness characteristics of WSA acreage recommended as unsuitable for designation as wilderness. The wilderness proposals are preliminary recommendations that will be evaluated in a Wilderness EIS scheduled to commence in October 1982. Congress will make the final decision to designate wilderness areas after receiving recommendations by the President. However, both suitable and non-suitable acreage within WSAs will be managed under the Wilderness Interim Management Policy until they are released from the wilderness review process.

### Vegetation Allocation

The Proposed Action includes increases in livestock forage allocations that could impact wilderness values in several areas recommended as "suitable" for wilderness. About 48,000 acres in five proposed wilderness areas have been identified as having special ecological and scientific values as representative of the Sagebrush Steppe ecological system in "good" ecological condition. These values are discussed in the Wilderness portion of Chapter 3.

Under the Proposed Action livestock grazing would be increased on 43,500 acres of the 48,000 acres in proposed wilderness areas in "good" ecological condition. These areas are currently ungrazed or lightly grazed. No increases would be anticipated on about 4,500 acres in good condition in Little Jacks and Big Jacks proposed wilderness areas. Even in allotments affected by AUM reductions, the stocking rates are based on grazing lightly grazed or ungrazed plateau areas which would increase livestock use in these areas.

Increased livestock grazing would result in a drop in condition class immediately adjacent to water sources. Even in areas which did not experience a drop in condition class increased grazing could have the following impacts on ecological processes: accelerated introduction of exotic species, increased trampling, reduction of litter, loss of highly palatable forbs, increased fertilization, removal of undergrowth, increased herbage growth at the expense of root storage, and retardation of natural fire (Ellison 1960). The dynamics of this ecological system are poorly understood. For every known impact there are undoubtedly numerous unknown impacts (Stoddart, Smith and Box 1975). Increases in livestock grazing in these areas would increase man's influence on the ecological and successional processes, thereby reducing their value as wilderness repositories for future ecological and scientific research.

## Big Jacks/Little Jacks Pipeline Proposal

Included in the Proposed Action is the construction of 19 miles of the Jacks Creek pipeline that lies outside areas recommended as suitable for wilderness. Areas within two miles of the pipeline would be subject to increased livestock use. The condition or areas immediately adjacent to water sources would decline.

Physical construction and maintenance of the pipeline would not significantly impact apparent naturalness, opportunities for solitude, or primitive recreation within the adjacent WSAs. Increased livestock grazing, however, would have significant impacts on the ecological values of 7,200 acres within Big Jacks and Little Jacks proposed wilderness areas. These areas are in good ecological condition and lie within two miles of the proposed pipeline. They are presently lightly grazed and would be subject to increased grazing pressure following completion of the pipeline. Specific impacts would be similar to those listed under vegetation allocation with severity of impacts dependent on distance from the pipeline.

## Other Project Developments

Other project developments would have no impacts on wilderness values in areas recommended as suitable for wilderness. Any project development authorized in these areas would be in conformance with wilderness management objectives.

Project development in areas recommended as non-suitable for wilderness could have significant impacts on the basic wilderness characteristics of these areas. Apparent naturalness is the characteristic most likely to be impacted. Actual impacts would depend on type of project, specific location, and spatial relationship to other proposed or existing projects. Preliminary estimates of project needs indicate the areas most likely to be impacted by project development are the Bruneau River plateau and the Shoofly drainage.

## Vegetation Manipulation

The Proposed Action includes controlled burning of about 52,700 acres in the proposed Owyhee River Wilderness. These areas are in poor to fair ecological condition. Overgrazing by livestock has disrupted the natural sequence of succession. Range specialists believe that burning is necessary to restore natural conditions and processes. Livestock have removed much of the understory and the probability of natural fire occurring is remote. No invasion of exotic species is anticipated following burning. After this initial reintroduction of fire, no additional vegetation manipulation would be proposed in this area. The reintroduction of fire into this ecosystem would complement wilderness values since the objective is to restore natural ecological succession which has been severed by man's activities. No other vegetation manipulation is proposed in areas recommended as "suitable" for wilderness.

The following vegetation manipulation projects are anticipated in WSA's recommended as "non-suitable" for wilderness:

| WSA | Treatment Method | Affected Acres |
|---|---|---|
| Bruneau River WSA | brush control & seeding | 18,750 |
| Sheep Creek East | controlled burning | 3,150 |
| Pole Creek | spraying | 3,050 |
| Little Jacks (Shoofly drainage) | spray or burning | 1,200 |
| Upper Deep Creek | spraying | 1,250 |
| Owyhee River WSAs | controlled burning | 5,500 |
| | | 33,400 |

Wilderness values would be irreversibly lost on the 19,250 acres scheduled for brush control and seeding. It is anticipated that these areas would be seeded with grass species not native to the region. Visually, the use of seed drills would produce a row effect similar to a cultivated field. These areas would lose their natural appearance and would suffer irreversible disruption of their natural ecological processes. These actions would probably negate any future consideration of these areas as wilderness.

Chemical spraying on 5,450 acres would disrupt the natural ecological processes and is inconsistent with wilderness objectives. Residuals from herbicides could have long-term impacts on natural processes, but the basic wilderness character of these areas would not be significantly altered if reinvading brush species become established.

About 8,650 acres are scheduled for controlled burning. The burning itself would not impact the wilderness characteristics or values of these areas. However, the construction of fire lines to control the burning could destroy the roadless character of these areas. This would eliminate these areas from future consideration as wilderness.

## RECREATION

Recreation use would increase due to regional population growth regardless of the proposal.

### Oregon Trail

Some of the proposed fences may cross or be visible from remnants of the Oregon Trail and associated historic routes. Fence construction could cause visual intrusions and restriction of access.

### Hunting and Fishing

Hunting and fishing opportunities would benefit from the proposed action. Due to a significant improvement in fisheries habitat condition and a slight improvement in wildlife habitat condition, the population of game species would increase.

By the year 2000, hunting use could increase to 194,600 hunter days under the proposed action. The quality of the fishing experience would significantly improve. Fishing use would show little change; however, since access is the limiting factor on many streams. If increased hunting use does not outstrip game numbers, the quality of hunting experiences may improve.

## ECONOMICS

### Economic Efficiency

This section looks at the question of whether the economic benefits outweigh the economic costs of implementing the proposed action. Only those benefits and costs that contribute or detract from national economic development are considered. The information found in this section is gross in nature and is intended to reflect the proposed action's economic efficiency in a general sense. Site specific analysis would be performed during AMP development to determine economic feasibility. Benefits considered are gains in rancher income and income gains related to increased recreational use of the area. Costs considered are the range improvement development and maintenance costs. These include costs incurred either by the BLM or the user. The benefits and costs over a 20 year time frame have been discounted to their present values using the current Water Resources Council discount rate. Discounting is a process that takes into account the time value of money to determine the present value of a sum of money to be received or expended at some point in the future. The net present worth of the proposed action (Present Worth of Benefits minus Present Worth of Costs) is +$503,700. The benefit/cost ratio (Present Worth of Benefits divided by Present Worth of Costs) is 1.156.

### Equity Considerations

#### Rancher Income

Overall, the proposed action initial allocation is a 15.1% reduction from active preference and a 6.6% increase from 5-year average use. This increase from average use results in an income gain of $167,000. This gain is not evenly distributed among budget size groups as can be seen in Table 4-6. Percent changes in AUM's ranges from a gain of 44% to a loss of 38%.

Income changes range from a gain of $3,400 per permittee to a loss of $13,900 per permittee. In total, there are 23 permittees whose initial allocation is a reduction from average use. The average reduction is 1,187 AUM's or 27%. The smallest reduction is four AUM's and the largest is 8,708. In the long term, after range improvements and land treatments are installed, the AUM allocation would be 13% above active preference and 42% above average use. There would still be seven permittees receiving reductions from their average use. Total income gain would be $683,700 annually by year 20.

Table 4-6
Initial Allocation and Income Change for Proposed Action

| Group | Number of Permittees | Active Preference | 5-Year Average Use | Proposed Action: Proposed Use (AUMs) | Proposed Action: % Change From Average | Proposed Action: Income Change Per Permittee | Proposed Action: Total Income Change |
|---|---|---|---|---|---|---|---|
| 1. 0-99 cows, Bruneau-Kuna | 13 | 2,735 | 2,214 | 3,195 | +44.3 | +$ 1,440 | +$ 18,720 |
| 2a. 100-499 cows, Bruneau-Kuna portion | 29 | 27,666 | 22,194 | 29,458 | +32.7 | +$ 2,772 | +$ 80,388 |
| 2b. 100-499 cows, Owyhee portion | 2 | 3,679 | 3,679 | 3,643 | - 0.9 | -$ 68 | -$ 136 |
| 3a. 500+ cows, Bruneau-Kuna portion | 32 | 170,146 | 138,804 | 151,743 | + 9.3 | +$ 3,438 | +$110,016 |
| 3b. 500+ cows, Owyhee portion | 3 | 33,988 | 22,909 | 14,236 | -37.9 | -$13,971 | -$ 41,913 |
| Bruneau-Kuna Subtotal | 74 | 200,547 | 163,212 | 184,396 | +12.9 | +$ 2,826 | +$209,124 |
| Owyhee Subtotal | 5 | 37,667 | 26,588 | 17,879 | -32.8 | -$ 8,410 | -$ 42,049 |
| Total | 79 | 238,214 | 189,800 | 202,275 | + 6.6 | +$ 2,115 | +$167,075 |

Range Improvements and Land Treatments

The improvements necessary to implement the proposed action would cost a total of $4.2 million. In addition, maintenance of new and existing projects would cost $40,900 annually. These costs are split between the BLM and permittees. BLM costs would be $2.9 million for installation and construction and $8,400 for maintenance. Rancher costs (primarily labor) would be $1.3 million for installation and $32,600 for annual maintenance.

Grazing Fee Distribution

Grazing fees are distributed in the following manner: 37.5% to

Federal treasury, 12.5% to the State of Idaho, 25% to range betterment in the district of origin, and 25% to range betterment at the Secretary of Interior's discretion (usually district of origin). By year five (the year of full implementation), total grazing fees would be approximately $376,000 with $188,000 going to range betterment, $47,000 to the State of Idaho, and $141,000 going to the Federal treasury. By year 20, total fees would be $510,000 with $255,000 going to range betterment, $64,000 to the State of Idaho and $191,000 to the Federal treasury. The present worth of these receipts would be:

| | |
|---|---|
| Range Betterment | $2.1 million |
| State of Idaho | $0.5 million |
| Federal Treasury | $1.5 million |
| Total | $4.1 million |

This compares with the present worth of the cost of installing and maintaining the range improvements and land treatments of $3.2 million (Federal and Rancher Costs).

Secondary Income Impacts

The primary impacts of increased rancher income, range improvement construction and income gains related to recreation use lead to local secondary impacts. These impacts occur as those directly impacted spend money in the local economy creating an increase in total regional income greater than the direct impact alone. This is called the multiplier effect. The multipliers used in this analysis were:

| Industry | Multiplier |
|---|---|
| Livestock | 1.360 |
| Construction | 1.125 |
| Services (Recreation-Related) | 1.130 |

These multipliers were estimated using the Bureau's Dynamic Regional Analysis Model (DYRAM). An explanation of DYRAM can be found in Appendix D.

Although the secondary impacts would be felt in virtually all sectors of the regional economy, these impacts would be greatest in those industries related to or providing services to the directly impacted industry. By year five, the direct and secondary impacts are as shown in Table 4-7.

Table 4-7
Economic Impacts By Year Five - Proposed Action

| Directly Impacted Industry | Direct Impact | Total Secondary Impact |
|---|---|---|
| Livestock | +$ 167,100 | +$ 60,200 |
| Construction | +$ 454,900 | +$ 56,900 |
| Services | +$ 66,500 | +$ 8,645 |
| Total | +$ 688,500 | +$125,700 |

By year 20, the total direct impact would be $990,700 with a total secondary impact of $299,200.

### Employment

Employment changes in the region are shown in Table 4-8.

Table 4-8
Employment Impact - Proposed Action (in Jobs)

| Industry | Direct |  | Secondary |  |
|---|---|---|---|---|
|  | Year 5 | Year 20 | Year 5 | Year 20 |
| Livestock | +15 | + 65 | + 6 | +23 |
| Construction | +32 | + 3 | + 4 | 0 |
| Services | + 9 | + 36 | + 1 | + 5 |
| Total | +56 | +104 | +11 | +28 |

### Capital Position

The capital position of ranchers would generally be improved for those ranchers receiving AUM allocations in excess of their active preference and worsened for ranchers whose allocation is less than their active preference. It is not possible to estimate the magnitude of such impacts. There is currently much debate in financial institutions and academia over the existence of such values and their magnitude if they do in fact exist. With the proposed action, 29 permittees would receive increases, 44 receive decreases, and six experience no change in their active preference initially. In the long term, 46 permittees would receive increases, 29 receive decreases, and four experience no change in their active preference.

## SOCIAL CONDITIONS

The proposed action could cause some individuals deriving their livelihood from ranch related activities to experience some reduction in their sense of social well being (29%). This is due to greater emphasis on overall multiple use management which would result in reductions in stocking rates for these permittees. The majority of the ranch related users (71%) could experience a strengthening of their social well being because of proposed increases in stocking rates.

## ALTERNATIVE #1 - CONTINUE PRESENT MANAGEMENT

### VEGETATION

#### Vegetation Types and Cover

Under this alternative, plant communities would continue to respond the same as they have in the past. Species composition and plant cover would not change significantly during the next 20 years. As additional range improvement developments are constructed, livestock distribution patterns would change to some extent. Species composition would begin to improve in areas which are now heavily grazed and areas which are now lightly grazed would begin a slow decline.

#### Riparian

Riparian habitat would continue to decrease in size and condition due to continued heavy livestock use. Development of waters away from streams would help relieve some of the livestock pressure from these areas; however, these areas would continue to be overgrazed and a continual decline in riparian habitat condition would be expected.

#### Condition and Trend

The present type of livestock grazing management has had a major impact on range condition in the EIS area. Poor livestock distribution throughout the EIS area has resulted in repeated overutilization of more accessible terrain and areas close to water, thus deterioration in range condition has resulted.

On allotments where the range inventory indicated forage deficiencies, declining range condition would occur. On allotments showing excess forage, range condition would improve. Because some allotments would improve while others would decline there is little overall change in condition class acreage for the entire study area. The following guide was used to predict allotments changes in condition class acreage and forage production.

| Indicated Adjustment | Predicted change in condition class acreage or forage production |
|---|---|
| 0-10% | No Change |
| 10-20% | 15% |
| 20-30% | 25% |
| 30-40% | 35% |
| 40-50% | 45% |
| 50-100% | 65% |

For example, if the survey data indicates an allotment is 8% over allocated, no change in condition class acreage or forage production would be predicted over the next 20 years. In effect, any indicated adjustment below 10% would be so close to continuing the present management that no change would be anticipated.

If another allotment had a reduction of 28% indicated, then 25% of the acreage in fair condition would be predicted to revert to poor and 25% of the acreage in good condition would revert to fair range condition. A corresponding 25% reduction in forage production would be expected.

Crested wheatgrass seedings were the only exception to this procedure. Productivity of these seedings were estimated to decline 10% over the next 20 years due to increased competition. As sagebrush density and cover increases, productivity of crested wheatgrass declines.

Based on the above predictions and data analysis, the acres within each condition class in 20 years would be as follows:

| | Poor | Fair | Good | Excellent | Treated |
|---|---|---|---|---|---|
| Present: | 1,278,367<br>(54%) | 448,698<br>(19%) | 334,608<br>(14%) | 4,108<br>(<1%) | 313,233<br>(13%) |
| 20 Years: | 1,278,367<br>(54%) | 427,250<br>(18%) | 356,056<br>(15%) | 4,108<br>(<1%) | 313,233<br>(13%) |

Range condition by allotment is shown in Appendix Table B-4.

### Production

Forage production would decline from the present 210,479 AUM's to 207,696 AUM' over 20 years under continued present livestock management. This is a net loss of 2,783 AUM's. The slight decline in available forage is mostly due to a decline in existing seeding condition. This is due to invading undesirable brush species and a resulting loss of palatable grass AUM's.

## SOIL AND WATER RESOURCES

### Soil Stability

Soil stability of upland sites, in the high and critical erosion hazard areas, would not change significantly. Ground cover would remain about the same. Soil compaction would occur where livestock are turned out early on moist soils.

Soil stability of streambanks and riparian areas would decrease on 75% of the public stream miles under present management sytems due to the tendency of livestock to concentrate on these areas. Trampling of stream banks and utilization of riparian vegetation would result in soil movement and sediment production.

## TERRESTRIAL WILDLIFE

### Mule Deer

Competition would continue between livestock and mule deer on range

Season of use conflicts would continue on spring and winter ranges.

## Antelope

Competition would continue between livestock and antelope on range in poor and fair condition. There is little or no competition between antelope and livestock on ranges in good ecological condition. Antelope populations are expected to remain static.

## Bighorn Sheep

The ecological condition of the bighorn sheep range and potential habitat is not expected to change. Canyon bottom riparian zones where livestock access is available would remain in fair to poor condition. The canyon rim in bighorn habitat on the west side of Battle Creek would remain in poor condition due to livestock use. Additional habitat degradation would be expected on good and fair condition range along Battle Creek. The net result would be the loss of Battle Creek as suitable habitat. Sheep would move back into the Owyhee River system. The majority of the existing habitat would remain in satisfactory condition.

## Waterfowl

Continuation of current practices is expected to maintain the existing situation for waterfowl. Nesting areas and brood rearing areas are heavily impacted by livestock around lakes and ponds in the EIS area. Livestock disturb nesting birds near the water and compete for the same forage species. On many reservoirs, nesting and brood cover has been totally removed by livestock. New water developments would provide additional habitat but livestock impact would limit nesting.

## Sage Grouse

The continuation of current grazing practices is expected to maintain the existing conditions for sage grouse. Key brood areas (riparian zones and wet and semi-wet meadows) are not expected to improve. Chick needs for forbs and insects will not be met. Competition for water at ponds and reservoirs in late summer would continue. Population levels would remain at current levels or decline.

## Meadow/Riparian Associated Wildlife

The meadow/riparian vegetation complex is currently being highly impacted (see Chapter 3, terrestrial and fisheries sections). With no change in management, no improvement is expected in these ecological communities. Continued degradation is expected on riparian zones accessible to livestock.

## Birds of Prey

Present levels of grazing and use patterns do not appear to be adversely impacting prey populations and therefore have essentially no foreseen impacts.

## FISHERIES

### Fisheries Habitat Condition

Continued livestock concentration in riparian areas would gradually eliminate those palatable woody shrubs along stream banks resulting in weakening of stream banks and eventual breakdown. Increase siltation would occur along with wider and shallower stream channels, higher water temperatures, reduced pool areas and reduced escape cover. Production of fish food organisms (invertebrates) would decline and spawning areas would deteriorate.

Water developments away from streams would help to relieve pressure in riparian systems, but an overall decline in riparian vegetation is predicted over time (Table 4-9).

Table 4-9
Fisheries Habitat Condition - Continue Present Management (miles)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 121 | 221 | 113 | 2 |
| 3-5 | 139 | 209 | 107 | 2 |
| 10 | 162 | 194 | 99 | 2 |
| 20 | 197 | 180 | 78 | 2 |

### Water Quality

Under current grazing stocking levels and use fisheries habitat condition would decline and water quality would accompany this decline. Lowered water tables, increased temperatures and sediment loads would become more common. Physical and chemical constituents which are limiting to trout would exert a greater influence on population levels (Table 4-10).

Table 4-10
Water Quality/Quantity Condition - Continue Present Management (in percent)

| Time (yrs) | Poor | Fair | Good |
|---|---|---|---|
| Present | 20 | 23 | 57 |
| 3-5 | 27 | 24 | 49 |
| 10 | 36 | 43 | 21 |
| 20 | 43 | 39 | 18 |

### Fish Populations

With the decline in riparian vegetation and fisheries habitat condition, the survival rate of juveniles would decrease. Spawning habitat and recruitment potential would decrease. Native adult fish would become more prone to predation and disease and numbers would decrease.

With continued present management, the following decreases in population numbers are projected:

In 2 to 5 years - 3% decrease
In 10 years - 3% decrease
In 20 years - 7% decrease

Total - 13% decrease

## VISUAL RESOURCES

Continuation of present management would have some negative impacts in range and riparian areas. Range improvement projects would have the impacts shown in Table 4-5.

## WILDERNESS

Under this alternative, all WSA acreage would be managed under the restrictions of the Wilderness Interim Management Policy.

### Vegetation Allocation

Vegetation allocation would remain at the five year average. Vegetation condition would improve in allotments slowing forage excesses and would decline on the allotments showing forage deficiencies.

As in the Proposed Action analysis, wilderness impacts would be most significant on the 48,000 acres in "good" condition within the proposed wilderness areas. Under this alternative, excess forage is present on allotments which include about 35,000 acres of the 48,000 total. Livestock grazing would gradually decrease on these 35,000 acres as the range condition of adjacent areas improves and stocking rates remain stable. This would reduce the impact livestock are having on natural ecological processes in these areas, thus, increasing their value as wilderness repositories for future scientific research. Livestock grazing would gradually increase on the remaining 13,000 acres as forage productivity of adjacent areas decline due to over allocation of existng forage.

### Project Development

Project development would have no impact on wilderness characteristics or values since only those projects compatible with preservation of wilderness values would be permitted in WSAs.

## RECREATION

### General

Recreation use would increase due to regional population growth. The overall quality of recreation opportunities would not improve.

### Oregon Trail

A few of the proposed fences may cross or be visible from remnants of the Oregon Trail and associated historic routes.

### Hunting and Fishing

Wildlife habitat would not improve, and the quality of stream fishing would decrease significantly.

By the year 2000, hunting use could increase to 184,500 hunter days under this alternative. The quality of the hunting experience for big and upland game would decrease.

## ECONOMICS

### Economic Efficiency

The net present worth of this alternative would be -$715,900. A benefit/cost ratio cannot be calculated for this alternative.

### Equity Considerations

#### Rancher Income

This alternative would have no impact on rancher income.

#### Range Improvements and Land Treatments

The improvements necessary to implement this alternative would cost a total of $641,000. In addition, maintenance of new and existing projects would cost $30,500 annually. BLM costs would be $394,000 for construction and $7,600 for maintenance. Rancher costs would be $247,000 for construction and $22,500 for maintenance.

#### Grazing Fee Distribution

Grazing fee distribution would be uniform throughout the life of this alternative. Total grazing fees would be $353,000 a year with $176,500 going to range betterment, $44,100 to the State of Idaho, and $132,400 to the Federal treasury. The present worth of these receipts would be:

| | |
|---|---|
| Range Betterment | $1.8 million |
| State of Idaho | $0.5 million |
| Federal Treasury | $1.3 million |
| Total | $3.6 million |

This compares with the present worth of the cost of installing and maintaining the range improvements and land treatments of $715,900 (Federal and Rancher Costs).

Secondary Income Impacts

By year five, the direct and secondary impacts are as shown in Table 4-11.

Table 4-11
Economic Impacts By Year Five - Continue Present Management

| Directly Impacted Industry | Direct Impact | Total Secondary Impact |
|---|---|---|
| Construction | +$ 90,300 | +$11,300 |

By year 20, the total direct impact would be $30,500 with a total secondary impact of +$3,800.

Employment

Employment changes in the region would be shown in Table 4-12.

Table 4-12
Employment Impact - Continue Present Management (In Jobs)

| Industry | Direct |  | Secondary |  |
|---|---|---|---|---|
|  | Year 5 | Year 20 | Year 5 | Year 20 |
| Construction | + 6 | + 2 | + 1 | 0 |

## Capital Position

This alternative would have no impact on capital position.

## SOCIAL CONDITIONS

Under the continue present management alternative, there would be no measurable impacts on the existing social systems of the area.

## ALTERNATIVE #2 - NO GRAZING

### VEGETATION

### Vegetative Types and Cover

Removal of livestock grazing pressure would have beneficial effects on vegetation composition and ground cover. Plant succession would progress and species composition would shift from less desirable plants toward species representing the climax plant community. The quality of ground cover would increase.

### Riparian

Riparian habitat is expected to improve significantly in 20 years under this alternative. Gradual improvement is expected at first; however, improvement should accelerate later on with continued rest from livestock grazing pressures.

### Condition and Trend

As plant succession progresses without livestock grazing, range condition would improve at varying rates. It is difficult to predict the effects of excluding livestock grazing on changes in vegetative composition and thus range condition. Rice and Westoby (1978) found that vegetal changes on protected areas in Utah were not consistent across sites nor predictable. Where soil has not deteriorated along with the vegetation, succession of vegetation accompanied by an improvement of ecological conditions would be rapid, especially if climatic conditions were favorable (Stoddart, Smith and Box 1975). There are instances in which total protection of range from livestock has failed to result in the expected revival of the vegetation, presumably because of the lack of animal action in aiding reproduction (ibid). Other factors in prediciting ecological response to no livestock grazing are: 1) existing levels of vegetation (sagebrush, cheatgrass, etc.), 2) competition with perennial grasses, and 3) capability of particular sites to be productive.

Under this alternative, all of the acreage within the 13 range sites that have high improvement potential would improve one condition class. Ten percent of the good condition range was predicted to improve to excellent condition.

Based on the above predictions the acreage within each condition class in 20 years would be as follows:

| | Poor | Fair | Good | Excellent | Treated |
|---|---|---|---|---|---|
| Present: | 1,278,367<br>(54%) | 448,698<br>(19%) | 334,608<br>(14%) | 4,108<br>(<1%) | 313,233<br>(13%) |
| 20 Years: | 745,512<br>(31%) | 655,044<br>(28%) | 627,991<br>(26%) | 37,234<br>(2%) | 313,233<br>(13%) |

Range condition by allotment is shown in Appendix Table B-5.

### Production

Under the no livestock grazing alternative, total forage production would increase by 24%; from 210,479 AUM's to 261,737 AUM's. This forage would not be grazed by livestock but would be available for wildlife and non-consumptive uses.

## SOIL AND WATER RESOURCES

### Soil Stability

Upland soil stability on high and critical erosion hazard areas is not expected to improve significantly since total ground cover would remain about the same. An upward trend in range condition, however, would result in an improvement in ground cover quality as perennial vegetation begins to replace annuals in the plant community. This would help reduce year to year fluctuations in ground cover, thus providing more dependable soil protection. Soil compaction resulting from livestock trampling on moist soils would be eliminated.

The absence of livestock would result in significantly improved soil stability of stream banks and riparian areas on all public lands within the EIS area previously accessible to livestock (approximately 75% of the public stream miles).

## TERRESTRIAL WILDLIFE

### Mule Deer

Competition for food, water and cover would be eliminated with this alternative. There would be an increase in forage and cover, thus improving habitat condition. However, this alternative would not allow desired habitat improvement on sagebrush sites in poor condition, where understory forbs and grasses are depleted. Without livestock, all forbs and grasses would be available for mule deer use. It is expected that even on these poor sites a quality diet would be available. Deer winter and summer range conflicts with cattle would be eliminated. This would cause improved deer condition and fawn survival.

Vegetation changes on fair condition range would be dramatic. Most fair condition range would be expected to improve to good condition. Riparian zones and meadows, used for foraging and resting by does and fawns, would also exhibit rapid improvement.

Due to the habitat changes under this alternative, mule deer populations would increase beyond the management objective. Their numbers would be expected to peak in 20 years and then decline and stabilize at a level considerably higher than the EIS objective.

### Antelope

This alternative would eliminate competition between livestock and antelope. There would be an increase in forage and cover, thus improving habitat condition. However, this alternative would not allow desired habitat expansion, since without range treatments, dense stands of big sagebrush would remain in poor range condition.

The majority of antelope winter/spring range is expected to improve in condition but not a full condition class. Table 4-13 shows the current winter/spring range condition in the Bruneau Planning Unit. Ninety percent of the antelope in the EIS area are dependent on this habitat.

Table 4-13
Antelope Winter/Spring Habitat Condition
(in percent)

| Habitat Area | Good | Fair | Poor | Disturbed | Seeded |
|---|---|---|---|---|---|
| Grasmere | 0 | 0 | 55 | 0 | 45 |
| Sheep Creek | 0 | 0 | 100 | 0 | 0 |
| Battle Creek | 0 | 20 | 80 | 0 | 0 |
| Bruneau Front | 5 | 10 | 80 | 5 | 0 |

Even though the condition class of these habitats would not improve, the benefits from lack of competition with livestock would be substantial. Herbaceous understory plants, needed by does and fawns on spring range, would be available without livestock competition. This coupled with recovery of riparian zones and meadows should allow antelope populations to exceed the reasonable management objectives. An antelope population boom would be expected and then a later decline. The population would stabilize at a level higher than the EIS objective.

## Bighorn Sheep

This alternative should allow bighorn habitat areas of lower condition upland and riparian zones to improve. Bighorn sheep population objectives would be met and the population would be in excellent physical condition. Potential bighorn habitat on Shoofly Creek, Big Jacks Creek and the West Fork of the Bruneau River would also be expected to improve.

## Waterfowl

Waterfowl food, nesting and brood cover is expected to greatly improve from elimination of grazing adjacent to reservoirs and other riparian habitats.

Excluding the Snake River and C.J. Strike Reservoir, the number of nesting waterfowl should double in the EIS area. This number is considered very conservative, since not all ponds and reservoirs were censused during the nesting season.

## Sage Grouse

The no grazing alternative would be highly beneficial to sage grouse.

Cover and forage would improve substantially in key riparian zones and meadows, thus benefitting brood rearing.

Large areas of sagebrush dominated sage grouse nesting habitat in poor condition, would not improve without treatment to selectively create openings and improve vegetative diversity. However, without livestock use understory cover in these stands would improve.

Water distribution would not improve, but water impoundments would hold water later in the summer due to the lack of use by livestock. Upland herbaceous, emergent and shoreline vegetation would improve around reservoirs and supply food and cover for adult sage grouse and broods.

This alternative should result in improved sage grouse health and a doubling of the population if other factors (weather, predation, and human disturbance) remained constant.

### Meadow/Riparian Associated Wildlife

Elimination of livestock grazing in meadow/riparian habitat would result in a rapid recovery of the vegetation. This would be highly beneficial to meadow/riparian wildlife. Beaver and water food supplies and other habitat would be greatly enhanced. Increased food (seeds and greens) and cover would allow increased populations of mountain quail and other small birds and mammals. The populations of small birds and mammals would, in turn, increase the abundance and diversity of predators (hawks, owls, bobcats, weasels, mink, etc.).

Pronghorn antelope and mule deer would greatly benefit from improved forage quality and cover in riparian zones and meadows.

### Birds of Prey

Because the character of ranges in the Birds of Prey area is comprised of substantial annual vegetation, vegetation production is influenced more by annual precipitation levels and patterns rather than by grazing management. As a result, range condition would not improve significantly, if at all. No grazing would have almost no short term impacts on vegetation, prey species or raptor reproduction. The exception would be that in a drought year, the limited perennial grasses that are present could supply enough nutrition to enable rebuilding of body fat reserves by ground squirrels.

## FISHERIES

### Fisheries Habitat Condition

With elimination of livestock grazing riparian habitats would experience a gradual increase in habitat condition the first three to five years. With continued rest accelerated improvement would occur in ten to 20 years. Stream bank cover would increase and stability of stream banks and channels would improve. Sediment loads would decrease to normal runoff amounts. Water tables would rise and depths of pools would increase. Overhanging bank development and instream cover would become more natural.

Table 4-14 illustrates the improvement of stream habitat condition which can be expected with no livestock grazing.

Table 4-14
Fisheries Habitat Condition - No Livestock Grazing (miles)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 121 | 221 | 113 | 2 |
| 3-5 | 101 | 204 | 143 | 9 |
| 10 | 5 | 103 | 270 | 79 |
| 20 | 0 | 31 | 157 | 269 |

### Water Quality

With elimination of livestock grazing water quality improvements would accompany improvements in riparian habitat condition.

The following improvements in EIS stream water quality can be expected with the advent of no livestock grazing (Table 4-15).

Table 4-15
Water Quality/Quantity - No Livestock Grazing (percent)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 20 | 23 | 57 | 0 |
| 3-5 | 18 | 18 | 64 | 0 |
| 10 | 6 | 12 | 49 | 33 |
| 20 | 0 | 12 | 21 | 67 |

### Fish Populations

Increases in streamside vegetation, overhanging banks, and a narrowing and deepening of channels would provide habitat for increased population numbers.

The following projections are based on no livestock grazing:

In 3-5 years - 5% increase
In 10 years - 25% increase
In 20 years - 17% increase

Total - 47% increase

## VISUAL RESOURCES

The No Grazing Alternative would have a positive effect on the landscape. Elimination of grazing would result in regrowth of riparian areas and grassland in the upland areas. Increased vegetative cover would reduce color contrasts created by bare soil and enhance the natural appearance of the landscape. The increase in wildlife would be an increased scenic attraction as well.

## WILDERNESS

Under the No Livestock Grazing Alternative the ecological and scientific values of the proposed wilderness areas would be greatly enhanced. Removal of livestock would eliminate the major impact man has on natural processes within the Sagebrush Steppe ecosystem (Young, Eckert and Evans 1979). This would allow the restoration of pristine conditions in those areas currently in "good" ecological condition. Under all other alternatives it is not anticipated that any areas in good ecological condition would improve to excellent condition (vegetation composition 75% to 100% of what should exist under pristine conditions).

The major deterrent to the preservation of wilderness characteristics in WSAs within the EIS area are "nonconforming uses" associated with livestock grazing. The use and maintenance of livestock management facilities and concentrations of livestock all detract from apparent naturalness and opportunities for both solitude and primitive recreation. The elimination of livestock grazing would enhance each of these wilderness characteristics and would greatly simplify management of these areas as wilderness.

## RECREATION

### General

Elimination of grazing would result in a more natural appearing landscape through the restoration of areas presently trampled by livestock around watering and salting areas, increased vegetative cover throughout the area, and through the removal of fences. This, in turn, would improve the quality of recreation opportunities on public land.

Increased vegetative cover would cause a higher potential for wild fires which could result in seasonal closure of areas of extreme fire hazard to public recreation use. Heavy vegetative growth along streams could restrict foot traffic.

Landowners may close their lands and roads to public use if implementation of this alternative results in private lands receiving more intense livestock use. This would restrict public access to adjacent public lands. Elimination of grazing could cause the sale of a few ranches and some parcels of private land for recreation-related purposees. It could also result in land exchanges to block-up private and public lands into more manageable units. This would benefit recreation use of public lands.

## Oregon Trail

Fences and other livestock improvements which are visual intrusions along remnants of the historic trails on public lands would be removed. More intense use of private grazing land could result in damage or destruction of trail remnants. Additional fences may be constructed along the boundaries of private land which cross remnants of historic trails.

## Hunting and Fishing

The habitat of all wildlife game species would improve as would fisheries habitat. Corresponding increases in wildlife numbers would attract more hunters, and increased trout numbers would significantly improve the quality of stream fishing. By the year 2000, hunting use could increase to 210,000 hunter days. This increase would be higher than projections made in the Idaho Outdoor Recreation Plan - 1977 and is due to a significant increase in wildlife numbers.

# ECONOMICS

## Economic Efficiency

The net present worth of this alternative would be -$11,740,000. The benefit/cost ratio would be 0.144.

## Equity Considerations

### Rancher Income

This alternative would bring about a 100% reduction in grazing use. This would result in an annual income loss of -$1,593,304. This loss would continue throughout the life of the alternative. Although this alternative would not put the average rancher in any size group out of business, it would severely impact the average rancher and could put a rancher that is heavily dependent on BLM grazing out of business. Table 4-16 shows the impacts of this alternative by size group.

### Range Improvements and Land Treatments

There would be no range improvements implemented with this alternative. There would be a BLM cost of $550,00 to remove fences.

### Grazing Fee Distribution

Since this alternative eliminates grazing, it also eliminates grazing fees.

Table 4-16
Initial Allocation and Income Changes - No Livestock Grazing Alternative

| Group | Number of Permittees | Active Preference | 5-Year Average Use | No Livestock Grazing | | | |
|---|---|---|---|---|---|---|---|
| | | | | Proposed Use (AUMs) | % Change From Average | Income Change Per Permittee | Total Income Change |
| 1. 0-99 cows, Bruneau-Kuna | 13 | 2,735 | 2,214 | 0 | -100 | -$ 3,849 | -$ 50,037 |
| 2a. 100-499 cows, Bruneau-Kuna portion | 29 | 27,666 | 22,194 | 0 | -100 | -$ 8,152 | -$ 236,408 |
| 2b. 100-499 cows, Owyhee portion | 2 | 3,679 | 3,679 | 0 | -100 | -$ 8,152 | -$ 16,304 |
| 3a. 500+ cows, Bruneau-Kuna portion | 32 | 170,146 | 138,804 | 0 | -100 | -$36,872 | +$1,179,936 |
| 3b. 500+ cows, Owyhee portion | 3 | 33,988 | 22,909 | 0 | -100 | -$36,872 | -$ 110,619 |
| Bruneau-Kuna Subtotal | 74 | 200,547 | 163,212 | 0 | -100 | -$19,816 | -$1,466,381 |
| Owyhee Subtotal | 5 | 37,667 | 26,588 | 0 | -100 | -$25,385 | -$ 126,923 |
| Total | 79 | 238,214 | 189,800 | 0 | -100 | -$20,168 | -$1,593,304 |

## Secondary Impacts

By year five, the direct and secondary impacts are as shown in Table 4-17.

Table 4-17
Economic Impacts By Year Five - No Livestock Grazing

| Directly Impacted Industry | Direct Impact | Total Secondary Impact |
|---|---|---|
| Livestock | -$1,593,300 | -$573,600 |
| Construction | +$ 55,000 | +$ 6,900 |
| Services | +$ 119,600 | +$ 15,500 |
| Total | -$1,418,700 | -$551,200 |

By year 20, the total direct impact would be a loss of -$1,114,900 with a total secondary impact of -$511,400. The secondary impact is still a loss since the livestock industry has a much greater impact on the local economy than does recreation.

Employment

Employment changes in the region are shown in Table 4-18.

Table 4-18
Employment Impact - No Livestock Grazing (In Jobs)

| Industry | Direct | | Secondary | |
|---|---|---|---|---|
| | Year 5 | Year 20 | Year 5 | Year 20 |
| Livestock | -147 | -147 | -53 | -53 |
| Construction | + 4 | 0 | 0 | 0 |
| Services | + 16 | + 65 | + 2 | + 8 |
| Total | -127 | - 82 | -51 | -45 |

Capital Position

This alternative would eliminate any capital value associated with grazing permits in the EIS area.

## SOCIAL CONDITIONS

The no livestock grazing alternative would have substantial impacts on the social well being of the ranching community. Ranchers which depend on public lands for grazing would be substantially impacted and may need to seek outside employment to subsidize reduced ranch income, consider ranch consolidation, or possibly sell the ranch to survive. If many ranches were in fact sold, local community organizations and businesses could experience losses of membership or clientele that could threaten their continued existence as well. In some cases, sale of the ranch and subsequent relocation could mean the loss of the opportunity to continue the ranching lifestyle.

## ALTERNATIVE #3 - INCREASED LIVESTOCK USE

### INTRODUCTION

Because of the similarity of this alternative to the proposed action, the impacts on certain resources would not be significantly different from those described for the proposed action. These resources include Soil and Water, Birds of Prey, Fisheries, Recreation and Social Conditions. These resources are not included in the following impact discussion.

### VEGETATION

#### Vegetation Types and Cover

Construction of an additional 22 miles of lateral lines onto the proposed Jacks Creek pipeline would make available additional forage for livestock use. Although this area would receive an increase in livestock use, by incorporating proper livestock management practices, species composition and cover would not change.

Species composition and the quality of cover would improve on the area(s) receiving additional brush control treatment in the Big Springs Allotment (#803) and additional brush control and reseeding area(s) in the Battle Creek Allotment (#802).

#### Riparian

No significant changes from those described in the proposed action would occur with this alternative.

#### Condition and Trend

Construction of 22 additional miles of the Jacks Creek pipeline would increase use of the existing vegetation. This area is currently used very little by livestock due to lack of water and is in good range condition. Providing water in this area would increase livestock utilization of the key forage plants. Areas immediately adjacent to water would receive heavy livestock use and range condition would decline on these areas. On adjacent areas, vegetation use by livestock would increase, but the range condition class would be maintained. This would occur due to proper management practices and insuring that proper utilization levels of key forage plants are not exceeded (monitoring). This area is not expected to change in condition class over the 20 year period.

Brush control on 800 acres within the Big Springs Allotment (#803) would improve the condition class on these areas. These acres are currently in fair condition and would improve to good condition in 20 years. Seeding 700 acres in the Battle Creek Allotment would increase the treated acres by 700 and reduce the poor condition acres by 700. The condition class of the remaining areas would be as described in the proposed action.

### Production

Construction of an additional 22 miles of lateral lines on the proposed Jacks Creek pipeline, would make available an additional 669 AUM's of forage on the Battle Creek Allotment (#802) and 1,164 AUM's on the Northwest Allotment (#808) above that described in the proposed action. These 1,833 AUM's are currently unavailable due to lack of water. Forage production in this area would decrease slightly due to the increased utilization of the key forage plants.

Because this alternative assumes that none of the wilderness study areas would be designated as wilderness, the increased forage production from brush control projects within WSAs would be allocated to livestock. An additional 3,816 AUM's on the Garat Allotment and 1,439 AUM's on the "45" Allotment would be allocated to livestock.

The additional land treatment proposals for Battle Creek (700 acres of brush control and reseeding) would increase production by 223 AUM's. Brush control on 900 acres in the Big Springs Allotment (#803) would provide an additional 200 AUM's. The 20 year forage production figures for these allotments and the study area total is shown on Table 4-19. The forage production for the remaining allotments would be the same as described in the proposed action.

Table 4-19
20 Year Forage Production - Increased Livestock Use

| Allotment | Initial Forage Production | Increase Above Initial Forage Production (AUM's) | | | Total Forage Production | Forage Not Allocated | Wildlife Allocation | Livestock Allocation |
|---|---|---|---|---|---|---|---|---|
| | | Grazing Management | Brush Control | Brush Control and Seeding | | | | |
| 584 Garat | 14,012 | 3,577 | 17,135 | 142 | 34,866 | 0 | 342 | 34,524 |
| 629 "45" | 8,098 | 809 | 3,633 | 0 | 12,540 | 4,038 | 208 | 8,294 |
| 802 Battle Creek | 12,157 | 3,147 | 1,800 | 768 | 17,872 | 0 | 206 | 17,666 |
| 803 Big Springs | 14,648 | 3,922 | 1,687 | 121 | 20,378 | 0 | 394 | 19,984 |
| 808 Northwest | 20,034 | 782 | 200 | 212 | 21,228 | 0 | 158 | 21,070 |
| Study Area Total | 210,479 | 30,527 | 29,592 | 13,069 | 283,667 | 4,038 | 2,333 | 277,296 |

## TERRESTRIAL WILDLIFE

### Mule Deer, Antelope, Waterfowl, Sage Grouse, Meadow/Riparian Wildlife

Impacts to the above would be similar to those expressed in the proposed action. This alternative would offer more water developments with inclusion of the entire Jacks Creek pipeline.

### Bighorn Sheep

The bighorn sheep population on Little Jacks Creek would be severely impacted by the pipeline in this alternative. Three of the lateral pipelines would extend into existing bighorn habitat. Approximately 12 square miles of habitat (18%) would be affected. Bighorns avoid areas occupied by cattle. This avoidance causes bighorns to concentrate within undisturbed portions of their habitat. This in turn, reduces the number of bighorns an area will support. The current population of 100 bighorns in Little Jacks Creek is considered a minimum number to sustain a viable population. Trefethen (1975) considers that 125 head is the minimum necessary to sustain a viable population.

This alternative would restrict available habitat and carrying capacity, thus, causing forage overuse and stress. With such a large portion of the bighorn habitat affected by the pipeline laterals and attracted livestock, inbreeding and resultant loss of the entire Little Jacks population would be expected.

Three pipeline laterals also overlap with the boundary of the potential bighorn sheep habitat on Big Jacks Creek. The pipeline would result in increased livestock use along the entire western rim of Big Jacks Creek. The available potential bighorn habitat would be restricted, thereby reducing carrying capacity and possibly making Big Jacks unsuitable for a bighorn transplant.

## VISUAL RESOURCES

Visual impacts of this alternative would be very similar to those described for the proposed action. Differences would occur in the area of the Jacks Creek pipeline. The Jacks Creek pipeline would adversely impact a 40 square mile VRM Class II area (assuming the area is not designated wilderness). Construction of pipeline laterals would create the appearance of a road network. Trampling would be apparent around stock watering troughs. The excellent sagebrush-steppe community on the plateau would be reduced in diversity and vigor. Consequently, its scenic quality would diminish. The bighorn herd on Little Jacks Creek, currently a tremendous scenic asset may be lost by livestock competition.

## WILDERNESS

### Project Development and Land Treatment

Alternative #3 addresses project development and vegetation manipulation that would be proposed if there were no constraints imposed by wilderness area recommendations.

An additional 22 miles of laterals from the Jacks Creek Pipeline would be constructed in Little Jacks Creek and Big Jacks Creek WSAs. The completed pipeline would resemble a constructed road. It is anticipated that frequent vehicle access would be necessary to maintain the project. Basic wilderness characteristics of the plateau between Little Jacks and Big Jacks Creeks would be severely impaired. The area would lose its natural appearance and roadless character. Frequent vehicle traffic would disrupt opportunities for solitude. Opportunities for primitive recreation would be restricted to the adjacent canyonlands.

Increased livestock grazing would have significant impacts on the ecological values of 11,250 acres within Big Jacks and Little Jacks WSAs. These are areas in "good" ecological condition that lie within two miles of the proposed pipeline. Included in this 11,250 acre area is a 1,000 acre area proposed as a Research Natural Area by the Idaho Natural Areas Coordinating Committee. These areas are presently lightly grazed and would be subject to intensive grazing pressure following completion of the pipeline.

All vegetation in the EIS area except for canyonlands would be managed for livestock grazing on a sustained yield basis. Livestock numbers would be increased on all 48,000 acres of "good" condition range in proposed wilderness areas.

Project development could impact the basic wilderness characteristics of all areas. However the severity of these impacts and the acreage affected cannot be evaluated until specific projects and project sites are proposed.

Additional vegetation manipulation proposed under this alternative includes 700 acres of brush control/seeding in Little Jacks WSA and 900 acres of spraying or burning in Upper Deep Creek WSA. Impacts described under Vegetation Manipulation in the Proposed Action would also occur under this alternative.

## ECONOMICS

### Economic Efficiency

The net present worth of this alternative would be +$625,900. The benefit/cost ratio would be 1.189.

### Equity Considerations

#### Rancher Income

Overall, this alternative's initial allocation is a 14.3% reduction from active preference and a 7.5% increase from five year average use. This increase from average use results in an income gain of $184,000. This gain is not evenly distributed among budget size groups as can be seen in Table 4-20. Percent change in AUM's ranges from a gain of 49% to a loss of 38%. Income changes vary from a gain of $3,800 per permittee to a loss of $13,900 per permittee. In total, there are 23 permittee's whose initial allocation is a reduction from average use. The average reduction is 1,174 AUM's or 27%. The smallest reduction is four AUM's and the largest is 8,708. In the long term, the AUM allocation would be 16% above active preference and 46% above average use. There would still be seven permittees receiving reductions from their average use. Total income gain would be $725,400 annually by year 20.

Table 4-20
Initial Allocation and Income Change - Increase Livestock Use

| | | | | Increased Livestock Use | | | |
|---|---|---|---|---|---|---|---|
| Group | Number of Permittees | Active Preference | 5-Year Average Use | Proposed Use (AUMs) | % Change From Average | Income Change Per Permittee | Total Income Change |
| 1. 0-99 cows, Bruneau-Kuna | 13 | 2,735 | 2,214 | 3,293 | +48.7 | +$ 1,583 | +$ 20,579 |
| 2a. 100-499 cows, Bruneau-Kuna portion | 29 | 27,666 | 22,194 | 29,659 | +33.6 | +$ 2,848 | +$ 82,592 |
| 2b. 100-499 cows, Owyhee portion | 2 | 3,679 | 3,679 | 3,643 | - 0.9 | -$ 68 | -$ 136 |
| 3a. 500+ cows, Bruneau-Kuna portion | 32 | 170,146 | 138,804 | 153,277 | +10.4 | +$ 3,845 | +$123,040 |
| 3b. 500+ cows, Owyhee portion | 3 | 33,988 | 22,909 | 14,236 | -37.9 | -$13,971 | -$ 41,913 |
| Bruneau-Kuna Subtotal | 74 | 200,547 | 163,212 | 186,229 | +14.1 | +$ 3,057 | +$226,211 |
| Owyhee Subtotal | 5 | 37,667 | 26,588 | 17,879 | -32.8 | -$ 8,410 | -$ 42,049 |
| Total | 79 | 238,214 | 189,800 | 204,108 | + 7.5 | +$ 2,331 | +$184,162 |

## Range Improvements and Land Treatments

The improvements necessary to implement this alternative would cost a total of $4.4 million. In addition, maintenance of new and existing projects would cost $41,200 annually. BLM costs would be $3.0 million for construction and $8,400 for maintenance. Rancher costs (primarily labor) would be $1.4 million for construction and $32,800 for maintenance.

## Grazing Fee Distribution

By year five (the year of full implementation), total grazing fees would be approximately $380,000 with $190,000 going to range betterment, $48,000 to the State of Idaho, and $142,000 going to the Federal treasury. By year 20, total fees would be $512,000 with $256,000 for range betterment, $64,000 to the State and $192,000 to the Federal treasury. The present worth of these receipts would be:

| | |
|---|---|
| Range Betterment | $2.1 million |
| State of Idaho | $0.5 million |
| Federal Treasury | $1.5 million |
| Total | $4.1 million |

This compares with the present worth of the cost of installing and maintaining the range improvements and land treatments of $3.3 million (Federal and Rancher Costs).

### Secondary Income Impacts

By year five, the direct and secondary income impacts are as shown in Table 4-21.

Table 4-21
Economic Impacts of Increased Livestock Use By Year Five

| Directly Impacted Industry | Direct Impact | Total Secondary Impact |
|---|---|---|
| Livestock | +$ 184,000 | +$ 66,200 |
| Construction | +$ 465,000 | +$ 58,100 |
| Services | +$ 66,000 | +$ 8,600 |
| Total | +$ 715,000 | +$132,900 |

By year 20, the total direct impact would be $1,030,400 with a total secondary impact of +$300,600.

### Employment

Employment changes in the region are as shown in Table 4-22.

Table 4-22
Employment Impact - Increased Livestock Use (In Jobs)

| Industry | Direct | | Secondary | |
|---|---|---|---|---|
| | Year 5 | Year 20 | Year 5 | Year 20 |
| Livestock | +17 | + 66 | + 6 | +24 |
| Construction | +33 | + 3 | + 4 | 0 |
| Services | + 9 | + 36 | + 1 | + 5 |
| Total | +59 | +105 | +11 | +29 |

## Capital Position

Initially, there would be 30 permittees receiving increases in active preference (and thus an improvement in their capital position), 43 receiving reductions in active preference, and six receiving no change. In the long term, 47 permittees would receive increases, 28 receive decreases, and four would experience no change.

# ALTERNATIVE #4 - REDUCED LIVESTOCK GRAZING

## VEGETATION

### Vegetation Types and Cover

Heavy spring use is detrimental to perennial grasses (Craddock and Forsling 1938). Delaying spring turnout dates until May 15 on those allotments which have antelope and/or sage grouse habitat conflicts would yield long term benefits to the existing vegetation. Delaying spring use would allow the vegetation to make substantial growth before livestock use takes place. The vegetative plant community would show an improvement in species composition as well as the quality of ground cover by delaying spring use and reducing stocking levels.

If the Jacks Creek pipeline is not built, forage would not be allocated in this area on the Battle Creek (#802) and Northwest (#803) allotments. The vegetative plant community in this area would continue to show improvement thus the species composition and quality of ground cover would improve over a 20 year period.

If the Jacks Creek pipeline is not built, options for the type of future grazing systems would be reduced on the Battle Creek and Northwest allotments due to lack of water. Without proper livestock management practices, the areas which are currently receiving heavy livestock utilization would continue to decline.

Reduced and/or elimination of brush control projects in the Garat Individual (#524), Garat (#584), "45" (#629), and Roaring Springs (#636) allotments would have an effect on the plant community. Species composition and the quality of cover would show little improvement on those areas which would not be treated.

### Riparian

Delaying spring use, until May 15th, on spring use pastures and reduced stocking levels would allow the riparian vegetation to make some early growth before livestock use takes place. On allotments which currently have a season of use, from April 1st to June 30th, the vegetation would show an improvement after 20 years, because livestock would only be using these allotments for 15 days. Allotments which have livestock use which continues through the summer and/or fall months would probably show no significant improvement unless fenced to exclude livestock.

### Condition and Trend

Before improvements to range condition (increased plant densities, more desirable plant composition and improved soil stability) can be realized, individual plant vigor must be improved (Parker 1954).

The proposed seasons of use and stocking level adjustments would maximize the opportunities for the beneficial interaction between grazing animals and perennial plants. This interaction would speed the vigor recovery of existing plants and improve establishment of new plants (Stoddart, Smith and Box 1975). Livestock would be turned out after the range readiness dates on all pastures where spring turnout dates were adjusted to May 15th.

By not constructing the Jacks Creek pipeline, range condition and trend would continue to improve at its current level, in the Battle Creek (#802) and Northwest (#808) allotments. Without this pipeline, options for future grazing systems would be limited thus the potential for improvement in range condition may not be realized. Areas currently receiving heavy livestock utilization would have slower recovery rates.

Range condition and trend would improve on the Garat (#584) and "45" (#629) allotments, but not as significantly as in the proposed action due to the reduced acres of brush control. Range condition would improve on the Garat Individual (#524) and Roaring Springs (#636) allotments due to the proposed grazing systems, however, improvement would be slower since no brush control projects would take place under this alternative.

The methodology for determining range condition in 20 years is the same as described in the Proposed Action. Additional improvement in range condition is predicted on those allotments in which season of use dates would be adjusted to May 15th. Changes in range condition are summarized below. Allotment specific data is presented in Appendix Table B-11.

| | Poor (acres) | Fair (acres) | Good (acres) | Excellent (acres) | Treated (acres) |
|---|---|---|---|---|---|
| Present: | 1,278,367<br>(54%) | 448,698<br>(19%) | 334,608<br>(14%) | 4,108<br>(<1%) | 313,233<br>(13%) |
| 20 Years: | 817,332<br>(34%) | 564,628<br>(24%) | 637,374<br>(27%) | 4,108<br>(<1%) | 355,572<br>(15%) |

### Production

Reduced stocking levels, delaying spring use until May 15th, developing range improvements, and applying proper grazing management practices would all have a positive effect on increasing forage production. As plant vigor, species composition, and range condition improves, production would increase above that described in the proposed action on those allotments where spring turnout dates have been set at May 15th.

Forage production is expected to increase on the Battle Creek (#802) Allotment if the Jacks Creek pipeline is not built. The initial livestock forage allocation shows a 38% downward adjustment in the Battle Creek (#802) Allotment from the 5-year licensed use with this alternative. Additional land treatment projects defined in the proposed action would also contribute to increased forage production. The total forage production potential may not be realized if the pipeline is not built because options for implementing grazing systems would be limited.

Forage production is expected to increase on the Northwest (#808)

Allotment in the Jacks Creek area without the pipeline. The initial livestock forage allocation shows a 39% increase in this allotment. Intensive monitoring would be necessary to insure proper utilization of key forage plants before increases in livestock use are granted.

Forage production through brush control on the Garat Individual (#524), Garat (#584), "45" (#629) and Roaring Springs (#636) allotments would decrease from that predicted in the proposed action. However, slight increases in forage production would take place through grazing management with development of specific livestock grazing systems.

The methodology for determining forage production in 20 years is the same as described in the Proposed Action. Additional increase in forage production was predicted on those allotments in which season of use dates were adjusted to May 15th. Forage production would increase by 36% from 210,479 AUM's to 285,697 AUM's as shown below: Allotment specific data is shown in Appendix Table B-12.

| Initial Forage Production | Increased Above Initial Forage Production (AUM's) | | | Total Forage Production | Forage Not Allocated | Wildlife Allocation | Livestock Allocation |
|---|---|---|---|---|---|---|---|
| | Grazing Management | Brush Control | Brush Control and Seeding | | | | |
| 210,479 | 40,900 | 21,472 | 12,846 | 285,697 | 40,415 | 2,333 | 242,949 |

## SOIL AND WATER RESOURCES

### Soil Stability

Upland soil stability on high and critical erosion hazard areas would not change significantly over the next 20 years, since total ground cover would remain about the same. Delaying spring livestock turnout dates, until May 15th, on selected allotments would allow soil moisture to decrease. This would be beneficial in that soil compaction caused by livestock trampling would be reduced. Reducing soil compaction increases water infiltration into the soil and reduces runoff.

Soil stability of streambanks and riparian areas would improve significantly on the 153 miles of streams to be managed for improved stream condition and on the 121 stream miles with a short season of use (5/15-6/30). This amounts to 46% of the public stream miles in the EIS area. Approximately 173 stream miles on public land accessible to livestock (approximately 29% of the public stream miles) would show a significant increase in soil disturbance. This is due to a predicted 20 year increase of 28% in the AUM's used as compared with the current five year average use. This increase in AUM's means that the average stocking rate over the entire EIS area would increase from 12.5 acres/AUM to 9.8 acres/AUM in 20 years. This does not take into account areas unsuitable for grazing or areas where grazing is excluded because of other uses. This increased stocking rate, when considered with the tendancy of livestock to congregate in riparian areas, would result in soil surface disturbance. It would also result in heavy utilization of riparian vegetation in areas without short grazing seasons and/or stream condition improvement objectives.

## TERRESTRIAL WILDLIFE

### Mule Deer

The allocation of forage for mule deer would benefit the population by slightly reducing the competition for forage on range in poor and fair condition. Proper stocking levels, implementation of grazing management, and proper utilization of key forage plants should also benefit mule deer. A gradual improvement in mule deer diet would result as range conditions improve.

The adjustment of the turn out date for livestock to May 15 would be of great benefit to mule deer. This later turn out on 21 allotments (Table 4-1) would allow deer to feed on nutritious high protein grass without livestock competition. Grass in the early spring makes up 40% of the deer diet and because of the high protein content is very important to pregnant does. The lack of competition with livestock prior to May 15 should result in healthier does and a resultant better fawn crop. On some allotments, the May 15 turn out date would allow deer to utilize the habitat an extra 2.5 months with no competition.

This alternative would achieve the objective established for mule deer, provided the guidelines described in the proposed action for utilization, cover requirements, and grazing system development are followed.

Proposed reservoirs and pipelines would benefit mule deer distribution in areas currently lacking adequate water sources. The 278 miles of protected riparian habitat should increase forage quality as condition of these areas improves. These fenced and canyon protected areas should also provide better cover for mule deer along these streams.

Range treatment of dense stands of big sagebrush in poor condition would cause an increase in grass and forb production, and improved plant composition. Valuable edge would be created, benefiting mule deer.

There are 155 miles of new fences proposed within mule deer habitat. This would present an additional hazard to deer. However, the impact on the population is considered slight because these fences would incorporate designs to facilitate passage.

Range condition in unfenced meadows and riparian habitats, important as mule deer fawning areas, is expected to show little improvement. Livestock would continue to concentrate in these areas even with reduced stocking rates, utilization limits and grazing systems.

## Antelope

Proper stocking levels, implementation of grazing management, and proper utilization of key forage plants should benefit antelope habitat.

The proposed May 15 livestock turn out date on antelope spring ranges should be of great benefit to antelope health and production. Although the winter/spring range between the Snake River and foothills in the northern portion of the Bruneau Planning Unit is expected to remain in poor condition, antelope would benefit by the lack of competition with livestock prior to this date for forbs and grasses.

Antelope are by adaptation, grazers of grasses and forbs from spring through mid-summer (Salwasser 1980). This winter/spring range supports the majority of the wintering antelope population. Spring grazing by livestock on this saltbrush/budsage habitat removes the limited nutritious forbs. These forbs are the predominant forage during spring and summer when adults are recovering from winter stresses, when females are supporting fetal growth and lactation, and when young are growing (Salwasser 1980). Ellis (1970) hypothesized that much of pronghorn population dynamics is related to the availability of forbs during spring and summer. Heavy cattle grazing on pronghorn spring and summer ranges prior to mid-May almost guarantees a high degree of dietary overlap (Salwasser 1980).

Antelope habitat now in excellent or good condition, which has provided a haven for antelope, would now be impacted by livestock attracted to the new water developments.

Riparian zones and meadows, as well as those important antelope summer use areas, which are not proposed for fencing to protect from livestock use, would remain in poor and fair ecological condition. The later turn out date, however, is expected to benefit 121 miles of streams not fenced by providing additional rest for the plants.

Adverse impacts from vegetative manipulation are not expected to occur because of the coordination measures described in the proposed action.

Proposed manipulation of dense stands of tall sagebrush would open areas for antelope. Such treatments would reduce shrub competition and allow improvement in species diversity, species composition and resultant forage quality.

The addition of new fence within antelope habitat would increase the hazard to antelope in spite of adherance to BLM specifications.

Overall, this alternative should allow the population to achieve the EIS objective for antelope.

## Bighorn Sheep

This alternative would be beneficial to bighorns. The later turn out date would allow more rest for areas within bighorn habitat that are normally grazed earlier and are not now in good ecological condition.

The proposed proper stocking levels, implementation of grazing management, and proper utilization of key forage plants should benefit upland habitat within bighorn use areas. This alternative would be more desirable than the proposed action, since it does not contain the Jacks Creek pipeline.

The areas overused by livestock along both sides of Battle Creek within bighorn habitat, would continue to decline if the season of use and stocking rate are not adjusted. Range improvement information is not specific enough to predict whether the needed habitat improvement would occur. The overall livestock reduction on the Big Springs Allotment, on the west side of Battle Creek, is 12%. Available information does not indicate if the reduction is to come off the deteriorated areas along Battle Creek. If this area does not improve the entire population (estimated to be 65 animals) may be lost.

If the Battle Creek habitat improves, the bighorn sheep population objective would be met.

### Waterfowl

This alternative would affect waterfowl populations. Livestock use affects emergent, shoreline and upland vegetation and causes trampling of nest sites. Since waterfowl usually nest near stock ponds and cattle tend to concentrate near water, impacts on habitat around existing reservoirs and ponds would be similar to present conditions.

The later May 15 livestock turn out on spring ranges would benefit waterfowl by allowing more time for nesting cover to develop around reservoirs on these allotments. Emergent food plants would also have more time to grow.

New reservoirs of greater than one surface acre would be fenced and thus be of great benefit to waterfowl. However, only a few reservoirs are expected to be of this size. The proposed 235 new reservoirs should provide additional waterfowl habitat. Even those reservoirs not fenced should serve as resting areas for resident and migrant waterfowl.

It is expected that there would only be a very insignificant increase in waterfowl nesting due to the small number of reservoirs actually fenced.

### Sage Grouse

The later livestock turn out date (May 15) would delay the movement of livestock into upland areas and meadows. This would allow greater growth of forbs and grasses, thus provide greater protective cover for sage grouse chicks in June. Meadows would also have more cover later in the season. Nutritious forbs, valuable in the chicks diet, should remain available longer.

Livestock would continue to make heavy use of key brood areas in meadows and riparian areas. Sage grouse nesting habitat in good condition, 20% in the Bruneau Planning Unit, which previously had only slight use by livestock, would now be impacted by increased livestock use. Range condition improvement on poor and fair condition nesting areas may balance impacts to good condition nesting areas. Reservoirs and pipelines proposed in sage grouse habitat would provide additional sources of water and improve grouse distribution.

Reservoirs and pipelines proposed in sage grouse habitat would provide additional sources of water and improve sage grouse distribution. Proposed fencing of reservoirs larger than one acre would increase vegetative cover, insect biomass and provide quality brood habitat. Fencing of riparian zones and springs would provide the same benefits.

Range treatments in sage grouse habitat is not expected to create adverse impacts due to coordination measures and standard operating procedures described in the proposed action and recommendations made in the Land Use Plan.

Overall this alternative should result in improved chick survival and sage grouse health. Population levels should improve from current levels.

### Meadow/Riparian Associated Wildlife

Riparian vegetation and habitat condition would improve on those streams and canyon areas fenced or receiving special management for resources other than livestock grazing (i.e. river otter, mountain quail, etc.). The increase in herbaceous and shrub cover provided by this change is expected to greatly benefit all riparian wildlife.

The protected stream miles are expected to improve to good ecological condition. New tree reproduction in these areas would eventually provide habitat for hawks, particularly Cooper's and sharp-shinned, and owls (great horned, long eared, and screech).

A total of 153 stream miles would be managed for improved fisheries habitat condition through fencing, juniper structures, etc. In addition, 125 miles of canyonland would be protected with gap fences. This is 47% of the total public stream miles in the EIS area.

The later livestock turn out date will also benefit meadow and riparian associated wildlife on some allotments. On 121 stream miles, in allotments with a short season of use (5/15-6/30), vegetative improvement would be expected to occur. It is not known whether improvement would lead to a change of a full condition class.

Vegetation in certain areas, such as meadows and drainage ways, are invariably closely utilized under any stocking rate or system of grazing. Where this is the case, about the only way to preserve the values is to fence the area from grazing (Hormay 1976).

Reservoirs and spring developments proposed to be fenced, would increase vegetative diversity and subsequently provide a small amount of high quality habitat, thus creating population increases for quail, small mammals, and passerine birds.

Birds of Prey

Impacts are the same as those described in the proposed action.

## FISHERIES

### Fisheries Habitat Condition

A delayed turnout date of May 15 would be beneficial to riparian systems in those allotments with existing early gathering dates (6/30). A substantial amount of current years growth on willow and other desirable woody species would be attained without frequent cropping as available stems would be more firm (less palatable). The availability and palatability of grasses and forbs would, at turnout, be increased and subsequently reduce use on woody riparian species. With delayed turnout, improvements would be expected in riparian areas on 116 stream miles.

Table 4-23 illustrates the improvement of stream habitat condition which can be expected with reduced livestock grazing.

Table 4-23
Fisheries Habitat Condition - Reduced Livestock Grazing
(miles)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 121 | 221 | 113 | 2 |
| 3-5 | 117 | 207 | 131 | 2 |
| 10 | 35 | 199 | 207 | 16 |
| 20 | 31 | 179 | 200 | 47 |

In those allotments with a later gathering date (October, November) no appreciable change is anticipated in habitat condition with a May 15 turnout.

### Water Quality

With improvements in riparian condition water quality is expected to improve (Table 4-24). Lower sediment yields, water temperatures, and bacterical counts would accompany any reduction in livestock season of use.

Table 4-24
Water Quality/Quantity - Reduced Livestock Grazing
(percent)

| Time (yrs) | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Present | 20 | 23 | 57 | 0 |
| 3-5 | 18 | 20 | 62 | 0 |
| 10 | 9 | 12 | 41 | 38 |
| 20 | 2 | 10 | 26 | 62 |

### Fish Populations

Improved vegetative cover adjacent to streams would increase the source and amounts of food available to fish populations. Decreased sediment loads would result in improved spawning beds and reproduction. Generally, improvement in riparian cover and water quality would be beneficial to trout populations. With delayed turnout and early gathering, the following increases in population numbers are projected:

3-5 years - 2% increase
10 years - 18% increase
20 years - 5% increase
Total - 25% increase

## VISUAL RESOURCES

This alternative would eliminate the adverse impacts associated with the Jacks Creek pipeline. Other impacts would be similar to those discussed in the proposed action. Later turnout dates and reduced livestock use would improve the scenic quality of additional stream miles.

## WILDERNESS

Under this alternative the pipeline would not be constructed and livestock numbers on the plateau between Big Jacks and Little Jacks Creeks would remain at approximate levels as today.

Impacts on wilderness would be similar to those listed under the Proposed Action except, of course, for the pipeline impacts. No livestock increases would be anticipated on about 11,750 acres in "good" ecological condition in Little Jacks and Big Jacks proposed wilderness areas. Increases in livestock use would occur on the remaining 36,500 acres of good condition range in proposed wilderness areas. However, because of later spring turn out dates livestock increases would be less than described under the Proposed Action and impacts to area in good condition would be less.

## RECREATION

Impacts would be the same as described in the proposed action except for hunting and fishing opportunities which would improve. By the year 2000, hunting use would increase to 205,000 hunter days.

## ECONOMICS

### Economic Efficiency

The net present worth of this alternative would be +$51,200. The benefit/cost ratio would be 1.017.

### Equity Considerations

#### Rancher Income

The initial allocation of this alternative is a 26.2% reduction from active preference and a 7.3% reduction from five year average use. This reduction from average use results in an income loss of $60,800. This loss is not evenly distributed among budget size groups as can be seen in Table 4-25. Percent change in AUM's ranges from a gain of 24% to a loss of 49%. Income changes vary from a gain of $1,400 per permittee to a loss of $17,900 per permittee. In total, there are 30 permittee's whose initial allocation is a reduction from average use. The average reduction is 1,360 AUM's or 34%. The smallest reduction is four AUM's and the largest is 11,181. In the long term, the AUM allocation would be 2% above active preference and 28% above average use. There would still be 10 permittees receiving reductions from their average use. Total income gaine would be $476,800 annually by year 20.

#### Range Improvements and Land Treatments

The improvements necessary to implement this alternative would cost a total of $3.8 million. In addition, maintenance of new and existing projects would cost $40,800 annually. BLM costs would be $2.6 milion for construction and $8,400 for maintenance. Rancher costs (primarily labor) would be $1.2 million for construction and $32,400 for maintenance.

#### Grazing Fee Distribution

By year five (the year of full implementation), total grazing fees would be approximately $327,200 with $163,600 going to range betterment, $40,900 to the State of Idaho, and $122,700 going to the Federal treasury. By year 20, total fees would be $452,200 with $226,100 for range betterment, $56,500 to the State of Idaho, and $169,600 to the Federal treasury. The present worth of these receipts would be:

| | |
|---|---|
| Range Betterment | $1.8 million |
| State of Idaho | $0.5 million |
| Federal Treasury | $1.4 million |
| Total | $3.7 million |

Table 4-25
Initial Allocation - Reduced Livestock Use

| Group | Number of Permittees | Active Preference | 5-Year Average Use | Reduced Livestock Grazing | | | |
|---|---|---|---|---|---|---|---|
| | | | | Proposed Use (AUMs) | % Change From Average | Income Change Per Permittee | Total Income Change |
| 1. 0-99 cows, Bruneau-Kuna | 13 | 2,735 | 2,214 | 2,734 | +23.5 | +$ 764 | +$ 9,932 |
| 2a. 100-499 cows, Bruneau-Kuna portion | 29 | 27,666 | 22,194 | 25,873 | +16.6 | +$ 1,407 | +$ 40,803 |
| 2b. 100-499 cows, Owyhee portion | 2 | 3,679 | 3,679 | 3,363 | - 8.6 | -$ 650 | -$ 1,300 |
| 3a. 500+ cows, Bruneau-Kuna portion | 32 | 170,146 | 138,804 | 132,180 | - 4.8 | -$ 1,764 | -$ 56,448 |
| 3b. 500+ cows, Owyhee portion | 3 | 33,988 | 22,909 | 11,772 | -48.6 | -$17,915 | -$ 53,745 |
| Bruneau-Kuna Subtotal | 74 | 200,547 | 163,212 | 160,787 | - 1.5 | -$ 77 | -$ 5,713 |
| Owyhee Subtotal | 5 | 37,667 | 26,588 | 15,135 | -43.1 | -$11,009 | -$ 55,045 |
| Total | 79 | 238,214 | 189,800 | 175,922 | - 7.3 | -$ 769 | -$ 60,758 |

This compares with the present worth of the cost of installing and maintaining the range improvements and land treatments of $3.0 million (Federal and Rancher Costs).

Secondary Income Impacts

By year five, the direct and secondary income impacts are as shown in Table 4-26.

Table 4-26
Economic Impacts of Reduced Livestock Use By Year Five

| Directly Impacted Industry | Direct Impact | Total Secondary Impact |
|---|---|---|
| Livestock | -$ 60,800 | -$ 21,900 |
| Construction | +$ 420,500 | +$ 52,600 |
| Services | +$ 76,800 | +$ 9,900 |
| Total | +$ 436,500 | +$ 40,600 |

By year 20, the total direct impact would be $1,067,600 with a total secondary impact of +$288,600.

Employment

Employment changes in the region are as shown in Table 4-27.

Table 4-27
Employment Impact - Reduced Livestock Use (In Jobs)

| Industry | Direct | | Secondary | |
|---|---|---|---|---|
| | Year 5 | Year 20 | Year 5 | Year 20 |
| Livestock | - 6 | + 44 | - 2 | +16 |
| Construction | +30 | + 3 | + 4 | 0 |
| Services | +10 | + 74 | + 1 | +10 |
| Total | +34 | +121 | + 3 | +26 |

## Capital Position

Initially, there would be 21 permittees receiving increases in active preference (and thus an improvement in their capital position), 54 receiving decreases in active preference, and four receiving no change. In the long term, 40 permittees receive increases, 35 receive decreases, and four experience no change.

## SOCIAL

This alternative could cause some ranchers who receive reduced stocking rates (27%) to experience a reduction in their overall sense of social well being. The majority of the ranch related users (68%) could experience a strengthening of their social well being, because of the proposed increases in stocking rates. Five percent of the permittee's social well being would remain unchanged.

## SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity is studied in detail throughout this EIS. The short-term uses for the proposed action and alternatives are described in Chapter 2. The long-term productivity of all resources would change under each management option, as indicated by the description of environmental consequences in this chapter. For a summary of long-term productivity, see the Comparative Summary Table 2-11 in Chapter 2.

## IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Although some changes caused by the proposed action and alternatives would be difficult to restore or reverse in the short term, all impacts would be reversible in the long term. On the other hand, to implement the proposed action or an alternative, certain resources would be committed and would not be retrievable in the foreseeable future. The anticipated irretrievable commitments for the proposed action and/or one or more the alternatives would include: 1) money, materials, fuel, and energy expended in management of livestock grazing and construction of range improvements, 2) loss of soil and/or productivity on localized areas because of livestock concentrations, 3) water and forage consumed by livestock or wildlife, 4) wilderness values on areas scheduled for brush control and seeding; and 5) livestock production, income, and associated economic benefits lost or foregone.

# CHAPTER 5
# CONSULTATION AND COORDINATION

## PAST ACTIONS

During the preparation of the grazing EIS, the team members were in contact with other federal offices, state and local representatives, interest groups, and individuals. Communication ranged from written to personal phone conversation.

All interested agencies, groups and individuals were kept aware of the EIS status through several communication methods. Notice of the upcoming grazing EIS was published in the Federal Register on November 10, 1981, Vol. 46, No. 217.

On December 1, 1981, over 700 notices were mailed to agencies, groups and individuals announcing the public review of the land use plan and the scoping for the grazing EIS. This was followed by news releases on December 3, 1981 discussing the Open House review and EIS scoping process. Over 100 comments were received between the December 14-15, 1982 Open House and the January 15, 1982 deadline for comments.

A status report updating the changes to the land use plan recommendation and the grazing EIS alternatives was mailed on March 15, 1982. The update included a brief description of the proposed action and the revised alternatives.

## CURRENT AND FUTURE ACTIONS

The draft EIS will be made available to the elected state, federal and local officials, agencies, groups and individuals for review and comment. Comments received by July 19, 1982 will be considered in the preparation of the final Environmental Impact Statement and in adjusting the recommendations in the land use plan.

The final Grazing Environmental Impact Statement will be completed in September, 1982. The final decisions on the Bruneau-Kuna land use plan will incorporate actions identified in the EIS. The land use plan will be released in early 1983.

The draft and final EIS are being sent to the following:

### Elected Officials

Governor, State of Idaho
Governor, State of Nevada
Attorney General
Senator James McClure
Senator Steven Symms
Representative Larry Craig
Representative George Hansen
State Legislators
Ada County Commissioners
Elmore County Commissioners
Owyhee County Commissioners

### State Agencies

Nevada State Clearinghouse
Idaho State Clearinghouse
Department of Agriculture
Department of Fish & Game
Department of Health & Welfare
  Division of Environment
Department of Lands
Department of Parks & Recreation
Idaho Transportation Department
  Office of Environment & Planning
Department of Water Resources

## Federal Agencies

Department of Agriculture
  Agricultural Research Service
  Soil Conservation Service
    Boise, Mountain Home, Grandview & Washington, D.C.
Forest Service
  Boise National Forest
  Region 4 Intermountain - Ogden
  Humboldt National Forest - Nevada
Environmental Protection Agency - Seattle and Boise
Department of Interior
  Bureau of Land Management, Idaho District Offices, Elko District Office
  Boise Field Solicitor's Office
  Bureau of Indian Affairs
  Fish and Wildlife Service
  Bureau of Reclamation
  Geological Survey
  Bureau of Mines
  National Park Service
  Natural Resources Library
Federal Energy Regulatory Commission
Advisory Council on Historic Preservation
Department of Commerce - Washington, D.C.
Department of Defense - Mountain Home Air Force Base

## State Agencies (cont.)

Idaho State Historical Society
Idaho Historic Preservation Office
University of Idaho - Cooperative Extension Service
Office of the Govenor - Division of Military
Bruneau Dunes State Park

## Local Government

Ada Planning Association
Ada Zoning Commission
Elmore County Planning & Zoning Commission
Elko County Planning & Zoning Commission
Owyhee County Historic Preservation Office
Elmore County Historic Foundation
Mountain Home Planning & Zoning Commission
League of Idaho Cities
Idaho Assocation of Counties

## Reservation

Duck Valley Indian Reservation

## Livestock Interests

Idaho Cattlemen's Association
Idaho Woolgrower's Association
Owyhee Cattlemen's Association
Boise District Grazing Advisory Board Members

## Organizations

Sierra Club
Ada County Fish & Game League
Idaho Wildlife Federation
Natural Resources Defense Council
Wilderness Society
Friends of the Earth
Idaho Environmental Council
Idaho Conservation League
Audubon Society
The Nature Conservancy
Nampa Rod and Gun Club
Oregon High Desert Study Group
League of Women Voters
Southwest Idaho Development Association
Owyhee County Historical Society
University of Idaho - Range & Forestry Department
Washington State University - Range & Forestry Department
Colorado State University - Range & Forestry Department
College of Idaho - Library
Idaho State University - Library
Boise State University - Library
Idaho Humane Society

## Organizations (cont.)

American Association of University Women
Citizens Alliance
Marsing Rod & Gun Club
Boise Valley Fly Fisherman
Idaho White Water Association
Ducks Unlimited
Izaak Walton League of America
Idaho Trail Machine Association
Elmore County Motorcycle Association
County Cooperative Extension
Snake River Regional Studies Center
Idaho Outfitters & Guides Association
Carey Act Association of Idaho
WETA of Idaho
Idaho Water Users Association
Idaho Mining Association
Society for Range Management
Owyhee Soil Conservation District
Idaho Motorcycle Association
Idaho Farm Bureau
Idaho Gem Club
Southwest Idaho Desert Racing Association
Owyhee County Cooperative Extension Service
Elmore Soil Conservation District
Gem State 4 X 4 Club

## Individuals

Livestock Operators
River OUtfitter & Guide Permittees
Ralph Mellon
Dennis Swisher
Arnold Coleman
Dave Lahtinen
Glen Oakley
Joyce Taylor
Jill Wyatt
Dick Burnett
Russel Heughins
Ed Chaney
Ed Langworthy
Keith Tendrick
Craig Cloharden
Marjorie & William Hayes
Jeff Swanstrum
John Mather
Bill Montano
Anna Burton
Zella M. Kent
Doli Obee
Don Denton
Fredrick Ward
LeLand Sasser
Bill Ross
J. E. Smithman
Bill Laurance
Ted Weigold
Tim Kessinger
Valerie Ryan
Ernie Day
Tim Duffner
Rick Howard
B. M. Wonrilk
David Hawk
Ken Robinson
Morlan Nelson
Neil R. Rimbey
Kenneth M. Goldsmith
Gene Curtis
Mike Chase
E. C. Herman
Dennis Baird
Paul Fritz
Jeff Fereday
Martin Litton

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Table A-1
Land Ownership by Allotment (in acres).

| Allotment | Allotment Acreage | | | | |
|---|---|---|---|---|---|
| | Public (BLM) | | | Private | |
| | Idaho | Nevada | State | Idaho | Nevada |
| 524 Garat Individual | 963 | 0 | 0 | 166 | 0 |
| 584 Garat | 207,219 | 0 | 12,072 | 1,149 | 0 |
| 629 "45" | 123,420 | 0 | 6,190 | 342 | 0 |
| 636 Roaring Springs | 3,660 | 0 | 0 | 0 | 0 |
| 801 Castle Creek | 200,442 | 0 | 16,030 | 39,464 | 0 |
| 802 Battle Creek | 148,911 | 0 | 8,738 | 44,327 | 0 |
| 803 Big Springs | 192,552 | 0 | 14,811 | 7,630 | 0 |
| 804 Bennett | 6,311 | 0 | 5,698 | 1,139 | 0 |
| 805 Riddle | 189,800 | 0 | 30,039 | 28,711 | 0 |
| 806 Pole Creek* | 3,480 | 0 | 0 | 3,058 | 0 |
| 807 Camas Creek Pocket* | 3,496 | 0 | 0 | 610 | 0 |
| 808 Northwest | 231,467 | 0 | 12,199 | 18,215 | 0 |
| 809 Center | 123,597 | 0 | 12,258 | 4,271 | 0 |
| 810 Scotts Table | 2,536 | 5,751 | 115 | 62 | 410 |
| 811 Canyon View Seeding* | 8,652 | 0 | 640 | 0 | 0 |
| 812 Miller Table Seeding* | 6,095 | 0 | 0 | 595 | 0 |
| 813 Mountain Home Subunit | 79,536 | 0 | 10,797 | 23,035 | 0 |
| 814 Long Tom Subunit | 22,432 | 0 | 1,656 | 8,127 | 0 |
| 815 Mud Springs | 10,773 | 0 | 1,520 | 505 | 0 |
| 816 Lockman Butte* | 4,113 | 0 | 240 | 149 | 0 |
| 817 Martha Avenue | 7,804 | 0 | 0 | 2,240 | 0 |
| 818 Ditto Creek | 18,034 | 0 | 2,925 | 24,518 | 0 |
| 819 Dive Creek | 5,684 | 0 | 190 | 530 | 0 |
| 820 Cornell | 7,096 | 0 | 895 | 10,224 | 0 |
| 821 Chalk Flat* | 12,588 | 0 | 0 | 4,810 | 0 |
| 822 Slater Flat* | 11,217 | 0 | 5,934 | 17,672 | 0 |
| 823 McConnell* | 3,880 | 0 | 640 | 8,597 | 0 |
| 824 Bonneville Point* | 2,516 | 0 | 70 | 6,919 | 0 |
| 825 Sunnyside Spring-Fall* | 178,055 | 0 | 35,732 | 126,188 | 0 |
| 826 Sunnyside Winter* | 192,161 | 0 | 15,944 | 76,278 | 0 |
| 827 Rattlesnake Seeding* | 3,504 | 0 | 0 | 160 | 0 |
| 828 Crater Ring Seeding* | 2,936 | 0 | 0 | 160 | 0 |
| 829 2+ Custodial* | 2,101 | 0 | 1,381 | 14,042 | 0 |
| 830 Section 34* | 40 | 0 | 0 | 160 | 0 |
| 831 Sheep Creek* | 1,470 | 0 | 830 | 2,232 | 0 |
| 832 Duck Ponds* | 245 | 0 | 0 | 40 | 0 |
| 833 Section 35* | 160 | 0 | 0 | 0 | 0 |
| 834 Rattlesnake Creek* | 4,598 | 0 | 900 | 3,377 | 0 |
| 836 West Tacket Creek* | 1,840 | 0 | 170 | 2,741 | 0 |
| 837 Rabbit Springs* | 547 | 0 | 5 | 0 | 0 |
| 838 Section 1* | 40 | 0 | 0 | 490 | 0 |
| 839 Melba Seeding* | 1,677 | 0 | 0 | 0 | 0 |
| 840 Strickland-Hill-Yates | 72,410 | 0 | 4,354 | 1,799 | 0 |
| 841 Buckhorn* | 2,862 | 0 | 138 | 3,991 | 0 |
| 842 M & L | 19,819 | 0 | 3,321 | 7,094 | 0 |
| 843 Simplot | 107,439 | 0 | 9,360 | 1,987 | 0 |
| 844 Tindall & Sons | 65,087 | 0 | 4,509 | 5,522 | 0 |
| 845 Antelope Creek | 20,146 | 0 | 1,437 | 59 | 0 |
| 846 Alzola | 55,384 | 2,468 | 3,948 | 5 | 0 |
| Total | 2,370,795 | 8,219 | 225,686 | 508,759 | 410 |

*Less intensive allotments.

# APPENDIX B FORAGE ALLOCATION METHODOLOGY

The following forage allocation procedures were followed on 33 allotments, representing 97% of the EIS area. The procedures for the remaining 16 allotments are described immediately following.

To make equitable apportionment of forage between the grazing animals, it is desirable to separate the animal preference for each plant species with the degree to which the plant can withstand grazing (or herbage removal) and still maintain itself in a viable, healthy condition. The amount of use depends upon its stage in phenological development. It is also influenced by the amount of precipitation it receives after grazing.

## Plant Use Factors

A use factor was applied to the production of each plant species to arrive at the total pounds of herbage that can be removed by grazing animals without affecting the viability of the plant. Ther herbage that can be removed by the grazing animal is designated as usable forage.

A use factor was not applied to unpalatable plants. Unpalatable plants are those not grazed by any ungulate except under heavy use. However, a use factor was applied to a particular plant species even though it is palatable to only one animal species.

A review of the literature shows that most grass species will, depending upon the time of year, tolerate herbage removal of up to 50% of its annual production by weight. The literature does not contain much information on proper utilization of forbs and shrubs.

Use factors vary for individual plant species depending on the season of use. A complete list of use factors by plant species and season of use is available upon request at the Boise District Office.

Use factors are lower in the spring and early summer for two reasons: (1) defoliation of the plant anytime during the growing period is harmful to the plant, and (2) production figures are based on mature weights and plants have actually produced only a portion of their total production during this period.

Where allocated, cheatgrass was given a use factor of 50% in the spring, which is during the species' peak growing season. During other periods, its use factor was lower, because a higher use factor would cause over utilization of desirable perennial species. It was not included in the allocation on some allotments because normal yearly production values are limited and sufficient desirable native species or crested wheatgrass seedings are present to satisfy the current grazing preference.

## Animal Diets

Data from various sources used fecal analysis to determine the animal preference or dietary requirements. The following table reflects the diet composition on a properly grazed range for various ungulates.

Appendix Table B-1
Diety Composition of Certain Ungulates
(in percent)

| Animal | Spring |  |  | Summer |  |  | Fall & Winter |  |  |
|---|---|---|---|---|---|---|---|---|---|
|  | Grass | Forb | Shrub | Grass | Forb | Shrub | Grass | Forb | Shrub |
| Cattle | 90 | 3 | 7 | 90 | 3 | 7 | 86[1/] | 0 | 14[1/] |
| Horses | 78 | 14 | 8 | 78 | 14 | 8 | 78 | 14 | 8 |
| Mule Deer | 35 | 24 | 41 | 5 | 50 | 45 | 8 | 22 | 70 |
| Antelope | 22 | 27 | 51 | 5 | 40 | 55 | 5 | 5 | 90 |
| Bighorn Sheep | 89 | 5 | 6 | 80 | 15 | 5 | 69 | 11 | 20 |
| Domestic Sheep | 35 | 37 | 28 | 35 | 37 | 28 | 24 | 1 | 75 |

[1/] The grass diet was adjusted to 40% and the shrub diet was adjusted to 60% on the Sunnyside Winter Allotment (826) because of the large amount of winterfat present.

Table B-2 shows the pounds of forage consumed per month (30 day period) by the various ungulates.

Appendix Table B-2
Forage Consumption for Ungulates

| Animal | Pounds Consumed/months |
|---|---|
| Cattle | 800 |
| Horses | 1,000 |
| Mule Deer | 130 |
| Antelope | 85 |
| Bighorn Sheep | 128 |
| Domestic Sheep | 162 |

## Available Forage Production Determination

Since allotments are grazed during different seasons or portions of different seasons, seasonal dates were established.

Spring - March 1 through June 15
Summer - June 16 through August 31
Fall-Winter - September 1 through February 28

To determine the amount of forage available for allocation, range sites were stratified by condition class. The total herbage production for each individual soil mapping unit was calculated using percent composition of each range site by condition class within that particular soil mapping unit. This percent composition was determined from a third order soil survey. The per acre production of vegetation within each mapping unit was then multiplied by the percent of the proper use limits for each species within a vegetative class.

The usable forage, per acre, by vegetative class, is then multiplied by the associated acres of a particular mapping unit within an allotment.

The palatable vegetation is used by livestock and wildlife; however, livestock are not allocated vegetation in unsuitable areas, whereas wildlife are. Therefore, in order to avoid over-allocation of vegetation to wildlife, their vegetal requirements (by class) were determined only on the suitable livestock range prior to the allocation process. Hence, all wildlife forage requirements used were competitive with livestock.

On 16 allotments (3% of the EIS area) within the Kuna Planning Unit, either 5-year licensed use or the present active grazing preference was used to establish properly usable forage in place of the method previously described. It was felt that licensed use or active grazing preference was the most accurate information available on these allotments because approximately 100,000 acres within the Kuna Planning Unit burned by wildfire after the range inventory was completed. Estimates of production data were further complicated by above normal forage produciton which occurred during the two years in which the inventory was conducted on these allotments. On the Bennett Allotment (804), actual use and condition and trend data was used to establish properly usable forage. A ranch plan is in effect and resource improvement is evident.

The forage allocation on all allotments will be closely monitored during the 5-year phase in period.

## RANGE SUITABILITY METHODOLOGY

Suitability refers to the capability of forage producing land to be grazed by livestock on a sustained yield basis without damage to the basic resources. Many areas can be grazed by livestock, thus they are usable, but some areas may not be suitable for grazing on a long term basis, because of resulting damage to these areas or adjacent areas.

The rock outcrop site was considered non suitable and forage produced on this range site was not allocated to livestock. This site occurs along many of the canyons and has slopes exceeding 50%. Forage was not allocated on approximately 65% of the McConnell Allotment (823), because slopes on this area exceeded 50%. No other suitability adjustments due to slope were made.

There is forage currently being produced that is not usable by livestock, because of lack of water. An estimate of the amount of that can not be used because of lack of water (potentially suitable range) was made for allotment 629 and that portion of the Battle Creek and Northwest allotments affected by the Jacks Creek pipeline. On allotment 629, it was felt that forage production above the current grazing preference was potentially suitable because of lack of water. In the area affected by the proposed Jacks Creek pipeline, forage further than two miles from any of the pipeline is considered unavailable (potentially suitable) for livestock use and is not included in the applicable forage allocation figures.

Other areas may contain potentially suitable range because of lack of water. Current data however is not sufficient to identify these areas. These areas would be determined through monitoring and appropriate adjustments in livestock use would be made.

# EXPLANATION FOR FORAGE NOT ALLOCATED

## Lack of Water

Forage that is now available in the Battle Creek (#802), Northwest (#808), and "45" (#629) has not been allocated initially. These areas are potentially suitable for livestock grazing and would be allocated to livestock when water is developed.

## Wilderness Recommendation Conflicts

Additional forage through land treatment projects (brush control), that is predicted in 20 years under the Proposed Action, would not be allocated to livestock on 26,000 acres in the Garat (584) and 26,700 acres in the "45" (629) allotments. Under Reduced Livestock Use, additional forage through land treatment projects (brush control), that is predicted in 20 years would not be allocated to livestock on 18,800 acres in the Garat (584) and 8,000 acres in the "45" (629) allotments. Current interpretation of the BLM's Wilderness Policy indicate that increases in forage production from land treatment projects within WSA's cannot be allocated to livestock unless done prior to designation as WSA's.

## Season of Use Restrictions

By adjusting the livestock turnout dates to May 15th, some AUM's of forage would not be grazed by livestock. This forage is not allocated to livestock during the remainder of the season so that grazing conflicts with other resource uses would be minimized. Also many operators would be unable to take advantage of these AUM's on some spring use pastures. Additional numbers of livestock would have to be turned out for a short time period to utilize forage available on spring use pastures. These increased numbers would not fit in well with the permittees overall operation on the remainder of the allotment.

Appendix Tables B-3 and B-4 detail forage not allocated under the proposed action and the reduced livestock use alternative.

Appendix Table B-3
Reasons for Not Allocating Forage - Proposed Action

| Allotment | Lack of Water (AUM's) | Wilderness Recommendation Conflicts (AUM's) | Total (AUM's) | |
|---|---|---|---|---|
| | Initial & 20 Years | 20 Years Only | Initial | 20 Years |
| 584 Garat | 0 | 3,816 | | 3,816 |
| 629 "45" | 4,038 | 1,439 | 4,038 | 5,477 |
| 802 Battle Creek | 669 | 0 | 669 | 669 |
| 808 Northwest | 1,164 | 0 | 1,164 | 1,164 |
| Total | 5,871 | 5,255 | 5,871 | 11,126 |

## Appendix Table B-4
## Reasons for Not Allocating Forage - Reduced Livestock Use

| Allotment | Lack of Water (AUM's) | Wilderness Recommendation Conflicts (AUM's) | Season-of-Use Restrictions (AUM's) | | Total (AUM's) | |
|---|---|---|---|---|---|---|
| | Initial & 20 Year | 20 Years Only | Initial | 20 Years | Initial | 20 Years |
| 584 Garat | 0 | 2,690 | 2,444 | 894 | 2,444 | 3,584 |
| 629 "45" | 4,038 | 767 | 300 | 65 | 4,338 | 4,870 |
| 801 Castle Creek | 0 | 0 | 1,171 | 1,801 | 1,171 | 1,801 |
| 802 Battle Creek | 1,111 | 0 | 2,558 | 3,213 | 3,669 | 4,324 |
| 803 Big Springs | 0 | 0 | 2,755 | 3,471 | 2,755 | 3,471 |
| 805 Riddle | 0 | 0 | 2,565 | 3,535 | 2,565 | 3,535 |
| 808 Northwest | 3,054 | 0 | 2,419 | 3,088 | 5,473 | 6,142 |
| 809 Center | 0 | 0 | 2,632 | 3,016 | 2,632 | 3,016 |
| 810 Scotts Table | 0 | 0 | 451 | 698 | 451 | 698 |
| 814 Long Tom Subunit | 0 | 0 | 618 | 797 | 618 | 797 |
| 840 Strickland-Hall-Yates | 0 | 0 | 308 | 617 | 308 | 617 |
| 841 Buckhorn | 0 | 0 | 41 | 41 | 41 | 41 |
| 842 M & L | 0 | 0 | 95 | 548 | 95 | 548 |
| 843 Simplot | 0 | 0 | 1,265 | 2,037 | 1,265 | 2,037 |
| 844 Tindall & Sons | 0 | 0 | 1,698 | 1,829 | 1,698 | 1,829 |
| 845 Antelope Creek | 0 | 0 | 1,447 | 1,702 | 1,447 | 1,702 |
| 846 Alzola | 0 | 0 | 1,254 | 1,403 | 1,254 | 1,403 |
| Total | 8,203 | 3,457 | 24,021 | 28,755 | 32,224 | 40,415 |

Appendix Table B-5
Present Range Condition Class In Acres

| Allotment | Poor | Fair | Good | Excellent | Treated | Total |
|---|---|---|---|---|---|---|
| 524 Garat Individual | 564 | 399 | 0 | 0 | 0 | 963 |
| 584 Garat | 116,287 | 58,174 | 30,800 | 0 | 1,958-B | 207,219 |
| 629 "45" | 79,618 | 23,065 | 30,737 | 0 | 0 | 123,420 |
| 636 Roaring Springs | 3,660 | 0 | 0 | 0 | 0 | 3,660 |
| 801 Castle Creek | 155,429 | 19,889 | 23,552 | 0 | 431-B<br>1,141-S | 200,442 |
| 802 Battle Creek | 59,377 | 50,334 | 36,691 | 327 | 2,182-B | 148,911 |
| 803 Big Springs | 67,363 | 91,094 | 34,095 | 0 | 0 | 192,552 |
| 804 Bennett | 3,771 | 2,536 | 4 | 0 | 0 | 6.311 |
| 805 Riddle | 99,750 | 59,212 | 30,838 | 0 | 0 | 189,800 |
| 806 Pole Creek* | 3,480 | 0 | 0 | 0 | 0 | 3,480 |
| 807 Camas Creek Pocket* | 0 | 130 | 3,366 | 0 | 0 | 3,496 |
| 808 Northwest | 110,547 | 38,511 | 69,121 | 0 | 13,288-B | 231,467 |
| 809 Center | 40,243 | 15,543 | 18,769 | 3,640 | 35,554-B<br>9,848-S | 123,597 |
| 810 Scotts Table | 3,099 | 2,213 | 2,975 | 0 | 0 | 8,287 |
| 811 Canyon View Seeding* | 3,389 | 106 | 340 | 0 | 4,817-S | 8,652 |
| 812 Miller Table Seeding* | 3,927 | 322 | 253 | 0 | 1,593-S | 6,095 |
| 813 Mtn. Home Subunit | 33,283 | 2,673 | 0 | 0 | 12,751-S<br>30,829-B | 79,536 |
| 814 Long Tom Subunit | 7,472 | 11,978 | 0 | 0 | 2,982-B | 22,432 |
| 815 Mud Springs | 50 | 0 | 0 | 0 | 2,699-S<br>8,024-B | 10,773 |
| 816 Lockman Butte* | 931 | 0 | 0 | 0 | 3,182-B | 4,113 |
| 817 Martha Ave. | 1,797 | 0 | 0 | 0 | 1.749-S<br>4,258-B | 7,804 |
| 818 Ditto Creek | 5,354 | 5,755 | 0 | 0 | 694-S<br>6,231-B | 18,034 |
| 819 Dive Creek | 0 | 798 | 0 | 0 | 4,886-B | 5,684 |
| 820 Cornell | 6,122 | 156 | 0 | 0 | 818-B | 7,096 |
| 821 Chalk Flat* | 3,315 | 0 | 0 | 0 | 6,227-B<br>3,046-S | 12,588 |
| 822 Slater Flat* | 3,086 | 40 | 0 | 0 | 8,091-B | 11,217 |
| 823 McConnell* | 128 | 0 | 2,194 | 0 | 1,558-B | 3,880 |
| 824 Bonneville Point* | 1,674 | 28 | 0 | 0 | 814-B | 2,516 |
| 825 Sunnyside Spring-Fall* | 88,320 | 0 | 0 | 0 | 85,246-B<br>4,489-S | 178,055 |
| 826 Sunnyside Winter* | 169,107 | 0 | 0 | 0 | 21,902-B<br>1,152-S | 192,161 |
| 827 Rattlesnake Seeding* | 0 | 0 | 0 | 0 | 3,046-S<br>458-B | 3,504 |
| 828 Crater Ring Seeding* | 479 | 0 | 0 | 0 | 2,343-S<br>114-B | 2,936 |
| 829 2+ Custodial* | 452 | 513 | 1,136 | 0 | 0 | 2,101 |
| 830 Section 34* | 40 | 0 | 0 | 0 | 0 | 40 |
| 831 Sheep Creek* | 0 | 0 | 0 | 0 | 1,470-B | 1,470 |
| 832 Duck Ponds* | 245 | 0 | 0 | 0 | 0 | 245 |
| 833 Section 35* | 160 | 0 | 0 | 0 | 0 | 160 |
| 834 Rattlesnake Creek* | 708 | 0 | 0 | 0 | 104-S<br>1,786-B | 4,598 |
| 836 West Tacket Creek* | 0 | 1,598 | 0 | 0 | 242-B | 1,840 |
| 837 Rabbit Springs* | 547 | 0 | 0 | 0 | 0 | 547 |
| 838 Section 1* | 0 | 0 | 0 | 0 | 40-B | 40 |
| 839 Melba Seeding* | 0 | 0 | 0 | 0 | 1,010-S<br>667-B | 1,677 |
| 840 Strickland-Hall-Yates | 58,623 | 1,837 | 10,461 | 0 | 95-S<br>1,395-B | 72,410 |
| 841 Buckhorn* | 69 | 316 | 2,477 | 0 | 0 | 2,862 |
| 842 M & L | 9,893 | 711 | 5,957 | 0 | 42-S<br>3,216-B | 19,819 |
| 843 Simplot | 76,935 | 15,015 | 9,049 | 0 | 5,401-S<br>1,039-B | 107,439 |
| 844 Tindall & Sons | 30,725 | 10,009 | 22,752 | 0 | 1,601-S | 65,087 |
| 845 Antelope Creek | 6,163 | 7,778 | 3,205 | 0 | 2,699-S<br>301-B | 20,146 |
| 846 Alzola | 22,185 | 27,966 | 5,836 | 141 | 1,724-S | 57,852 |
| Total | 1,278,367<br>(54%) | 448,698<br>(19%) | 334,608<br>(14%) | 4,108<br>(<1%) | 251,189-B<br>62,044-S<br>313,233<br>(13%) | 2,379,014 |

* Less intensive allotment.

## Appendix Table B-6
## Present Apparent Range Trend (in acres)

| Allotment | Downward | Non Apparent | Upward | Total |
|---|---|---|---|---|
| 524 Garat Individual | 963 | 0 | 0 | 963 |
| 584 Garat | 0 | 0 | 207,219 | 207,219 |
| 629 "45" | 6,300 | 96,090 | 21,030 | 123,420 |
| 636 Roaring Springs | 3,660 | 0 | 0 | 3,660 |
| 801 Castle Creek | 1,779 | 104,768 | 93,895 | 200,442 |
| 802 Battle Creek | 0 | 146,530 | 2,381 | 148,911 |
| 803 Big Springs | 0 | 192,552 | 0 | 192,552 |
| 804 Bennett | 6,120 | 191 | 0 | 6,311 |
| 805 Riddle | 41,017 | 103,171 | 45,612 | 189,800 |
| 806 Pole Creek* | 0 | 3,480 | 0 | 3,480 |
| 807 Camas Creek Pocket* | 0 | 0 | 3,496 | 3,496 |
| 808 Northwest | 69,136 | 162,331 | 0 | 231,467 |
| 809 Center | 17,661 | 105,936 | 0 | 123,597 |
| 810 Scotts Table | 0 | 8,287 | 0 | 8,287 |
| 811 Canyon View Seeding* | 8,652 | 0 | 0 | 8,652 |
| 812 Miller Table Seeding* | 6,095 | 0 | 0 | 6,095 |
| 813 Mountain Home Subunit | 0 | 79,536 | 0 | 79,536 |
| 814 Long Tom Subunit | 0 | 22,432 | 0 | 22,432 |
| 815 Mud Springs | 0 | 4,881 | 7,892 | 10,773 |
| 816 Lockman Butte* | 0 | 4,113 | 0 | 4,113 |
| 817 Martha Avenue | 0 | 7,804 | 0 | 7,804 |
| 818 Ditto Creek | 0 | 18,034 | 0 | 18,034 |
| 819 Dive Creek | 0 | 5,684 | 0 | 5,684 |
| 820 Cornell | 0 | 7,096 | 0 | 7,096 |
| 821 Chalk Flat* | 0 | 12,588 | 0 | 12,588 |
| 822 Slater Flat* | 0 | 11,217 | 0 | 11,217 |
| 823 McConnell* | 0 | 3,880 | 0 | 3,880 |
| 824 Bonneville Point* | 0 | 2,516 | 0 | 2,516 |
| 825 Sunnyside Spring-Fall* | 0 | 178,055 | 0 | 178,055 |
| 826 Sunnyside Winter* | 0 | 192,161 | 0 | 192,161 |
| 827 Rattlesnake Seeding* | 0 | 3,504 | 0 | 3,504 |
| 828 Crater Ring Seeding* | 2,936 | 0 | 0 | 2,936 |
| 829 2+ Custodial* | 0 | 2,101 | 0 | 2,101 |
| 830 Section 34* | 0 | 40 | 0 | 40 |
| 831 Sheep Creek* | 0 | 1,470 | 0 | 1,470 |
| 832 Duck Ponds* | 0 | 245 | 0 | 245 |
| 833 Section 35* | 0 | 160 | 0 | 160 |
| 834 Rattlesnake Creek* | 0 | 4,598 | 0 | 4,598 |
| 836 West Tacket Creek* | 0 | 1,840 | 0 | 1,840 |
| 837 Rabbit Springs* | 547 | 0 | 0 | 547 |
| 838 Section 1* | 0 | 40 | 0 | 40 |
| 839 Melba Seeding* | 0 | 1,677 | 0 | 1,677 |
| 840 Strickland-Hill-Yates | 0 | 72,410 | 0 | 72,410 |
| 841 Buckhorn* | 0 | 2,862 | 0 | 2,862 |
| 842 M & L | 0 | 19,819 | 0 | 19,819 |
| 843 Simplot | 9,372 | 83,628 | 14,439 | 107,439 |
| 844 Tindall & Sons | 4,746 | 60,341 | 0 | 65,087 |
| 845 Antelope Creek | 4,128 | 16,018 | 0 | 20,146 |
| 846 Alzola | 3,899 | 26,610 | 27,343 | 57,852 |
| Total | 187,011<br>(8%) | 1,768,696<br>(74%) | 423,307<br>(18%) | 2,379,014 |

*Less intensive allotments.

## Appendix Table B-7
## 20-Year Range Condition Class - Proposed Action
(in acres)

| Allotment | Poor | Fair | Good | Excellent | Treated | Total |
|---|---|---|---|---|---|---|
| 524 Garat Individual | 47 | 356 | 560 | 0 | 0 | 963 |
| 584 Garat | 54,881 | 96,660 | 53,180 | 0 | 2,498 | 207,219 |
| 629 "45" | 24,218 | 68,465 | 30,737 | 0 | 0 | 123,420 |
| 636 Roaring Springs | 328 | 2,687 | 645 | 0 | 0 | 3,660 |
| 801 Castle Creek | 69,212 | 75,234 | 43,224 | 0 | 12,772 | 200,442 |
| 802 Battle Creek | 38,636 | 16,272 | 89,694 | 327 | 3,982 | 148,911 |
| 803 Big Springs | 13,004 | 68,489 | 110,659 | 0 | 400 | 192,552 |
| 804 Bennett | 313 | 1,720 | 3,278 | 0 | 1,000 | 6,311 |
| 805 Riddle | 13,643 | 72,996 | 93,461 | 0 | 9,700 | 189,800 |
| 806 Pole Creek* | 3,353 | 127 | 0 | 0 | 0 | 3,480 |
| 807 Camas Creek Pocket* | 0 | 124 | 3,372 | 0 | 0 | 3,496 |
| 808 Northwest | 99,990 | 41,475 | 76,014 | 0 | 13,988 | 231,467 |
| 809 Center | 37,096 | 15,793 | 21,666 | 3,640 | 45,402 | 123,597 |
| 810 Scotts Table | 1,737 | 3,410 | 3,140 | 0 | 0 | 8,287 |
| 811 Canyon View Seeding* | 3,055 | 437 | 343 | 0 | 4,817 | 8,652 |
| 812 Miller Table Seeding* | 2,500 | 639 | 263 | 0 | 2,693 | 6,095 |
| 813 Mtn. Home Subunit | 29,573 | 5,542 | 842 | 0 | 43,579 | 79,536 |
| 814 Long Tom Subunit | 4,010 | 13,840 | 1,600 | 0 | 2,982 | 22,432 |
| 815 Mud Springs | 50 | 0 | 0 | 0 | 10,723 | 10,773 |
| 816 Lockman Butte* | 931 | 0 | 0 | 0 | 3,182 | 4,113 |
| 817 Martha Ave. | 882 | 315 | 0 | 0 | 6,607 | 7,804 |
| 818 Ditto Creek | 2,863 | 8,246 | 0 | 0 | 6,925 | 18,034 |
| 819 Dive Creek | 0 | 798 | 0 | 0 | 4,886 | 5,684 |
| 820 Cornell | 2,497 | 2,681 | 0 | 0 | 1,918 | 7,096 |
| 821 Chalk Flat* | 3,315 | 0 | 0 | 0 | 9,273 | 12,588 |
| 822 Slater Flat* | 1,181 | 1,945 | 0 | 0 | 8,091 | 11,217 |
| 823 McConnell* | 58 | 70 | 2,194 | 0 | 1,558 | 3,880 |
| 824 Bonneville Point* | 158 | 1,544 | 0 | 0 | 814 | 2,516 |
| 825 Sunnyside Spring-Fall* | 85,190 | 3,130 | 0 | 0 | 89,735 | 178,055 |
| 826 Sunnyside Winter* | 169,074 | 33 | 0 | 0 | 23,054 | 192,161 |
| 827 Rattlesnake Seeding* | 0 | 0 | 0 | 0 | 3,504 | 3,504 |
| 828 Crater Ring Seeding* | 479 | 0 | 0 | 0 | 2,457 | 2,936 |
| 829 2+ Custodial* | 389 | 548 | 1,164 | 0 | 0 | 2,101 |
| 830 Section 34* | 28 | 12 | 0 | 0 | 0 | 40 |
| 831 Sheep Creek* | 0 | 0 | 0 | 0 | 1,470 | 1,470 |
| 832 Duck Ponds* | 245 | 0 | 0 | 0 | 0 | 245 |
| 833 Section 35* | 112 | 48 | 0 | 0 | 0 | 160 |
| 834 Rattlesnake Creek* | 708 | 0 | 0 | 0 | 3,890 | 4,598 |
| 836 West Tacket Creek* | 0 | 1,598 | 0 | 0 | 242 | 1,840 |
| 837 Rabbit Springs* | 547 | 0 | 0 | 0 | 0 | 547 |
| 838 Section 1* | 0 | 0 | 0 | 0 | 40 | 40 |
| 839 Melba Seeding* | 0 | 0 | 0 | 0 | 1,677 | 1,677 |
| 840 Strickland-Hall-Yates | 57,587 | 2,598 | 10,735 | 0 | 1,490 | 72,410 |
| 841 Buckhorn | 54 | 277 | 2,531 | 0 | 0 | 2,862 |
| 842 M & L | 8,380 | 750 | 6,231 | 0 | 4,458 | 19,819 |
| 843 Simplot | 66,900 | 5,566 | 21,033 | 0 | 13,940 | 107,439 |
| 844 Tindall & Sons | 23,698 | 12,338 | 24,450 | 0 | 4,601 | 65,087 |
| 845 Antelope Creek | 4,930 | 6,886 | 4,630 | 0 | 3,700 | 20,146 |
| 846 Alzola | 9,712 | 23,076 | 21,399 | 141 | 3,524 | 57,852 |
| Total | 835,564<br>(35%) | 556,725<br>(24%) | 627,045<br>(26%) | 4,108<br>(<1%) | 355,572<br>(15%) | 2,379,014 |

* Less intensive allotment.

## Appendix Table B-8
## 20 Year AUM Projection - Proposed Action

| Allotment | Initial Forage Production | Increased Above Initial Forage Production (AUM's) | | | Total Forage Production | Forage Not Allocated 1/ | Wildlife Allocation | Livestock Allocation | % Change From | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Grazing Management | Brush Control | Brush Control and Seeding | | | | | Active Preference | 5-Year Licensed Use |
| 524 Garat Individual | 44 | 9 | 122 | 0 | 175 | 0 | 0 | 175 | + 54 | + 54 |
| 584 Garat | 14,012 | 3,577 | 17,135 | 142 | 34,866 | 3,816 | 342 | 30,708 | - 8 | + 37 |
| 629 "45" | 8,098 | 809 | 3,633 | 0 | 12,540 | 5,477 | 208 | 6,855 | + 78 | + 78 |
| 636 Roaring Springs | 313 | 13 | 629 | 0 | 955 | 0 | 0 | 955 | +122 | +343 |
| 801 Castle Creek | 14,478 | 2,407 | 333 | 3,391 | 20,609 | 0 | 78 | 20,531 | - 8 | - 5 |
| 802 Battle Creek | 12,157 | 3,147 | 1,800 | 545 | 17,649 | 669 | 206 | 16,774 | + 25 | + 26 |
| 803 Big Springs | 14,648 | 3,922 | 1,467 | 121 | 20,158 | 0 | 394 | 19,764 | + 11 | + 22 |
| 804 Bennett | 644 | 0 | 225 | 333 | 1,202 | 0 | 3 | 1,199 | + 25 | + 67 |
| 805 Riddle | 15,091 | 5,872 | 2,000 | 2,937 | 25,900 | 0 | 232 | 25,668 | - 6 | + 9 |
| 806 Pole Creek* | 128 | 14 | 0 | 0 | 142 | 0 | 0 | 142 | - 9 | + 14 |
| 807 Camas Creek Pocket* | 529 | 0 | 0 | 0 | 529 | 0 | 4 | 525 | + 40 | + 40 |
| 808 Northwest | 20,034 | 782 | 200 | 212 | 21,228 | 1,164 | 158 | 19,906 | + 49 | + 92 |
| 809 Center | 17,816 | 440 | 133 | 0 | 18,389 | 0 | 42 | 18,347 | +175 | +211 |
| 810 Scotts Table | 677 | 156 | 0 | 0 | 833 | 0 | 30 | 803 | + 40 | + 39 |
| 811 Canyon View Seeding* | 1,741 | 45 | 0 | 0 | 1,786 | 0 | 6 | 1,780 | - 22 | +113 |
| 812 Miller Table Seeding* | 986 | 32 | 0 | 333 | 1,351 | 0 | 6 | 1,345 | + 82 | + 96 |
| 813 Mountain Home Subunit | 10,447 | 548 | 133 | 0 | 11,128 | 0 | 93 | 11,035 | + 18 | + 71 |
| 814 Long Tom Subunit | 3,416 | 156 | 267 | 0 | 3,839 | 0 | 88 | 3,751 | + 20 | + 83 |
| 815 Mud Springs | 1,809 | 607 | 0 | 0 | 2,416 | 0 | 9 | 2,407 | + 59 | + 84 |
| 816 Lockman Butte* | 542 | 30 | 0 | 0 | 572 | 0 | 0 | 572 | + 6 | + 6 |
| 817 Martha Avenue | 871 | 543 | 0 | 200 | 1,614 | 0 | 0 | 1,614 | + 85 | +107 |
| 818 Ditto Creek | 2,227 | 832 | 0 | 0 | 3,059 | 0 | 99 | 2,960 | + 39 | + 65 |
| 819 Dive Creek | 476 | 20 | 0 | 0 | 496 | 0 | 35 | 461 | + 47 | - 4 |
| 820 Cornell | 792 | 99 | 83 | 333 | 1,307 | 0 | 18 | 1,289 | - 2 | + 21 |
| 821 Chalk Flat* | 2,145 | 521 | 0 | 0 | 2,666 | 0 | 0 | 2,666 | + 6 | + 23 |
| 822 Slater Flat* | 1,200 | 0 | 0 | 0 | 1,200 | 0 | 0 | 1,200 | - 54 | 0 |
| 823 McConnell* | 123 | 0 | 0 | 0 | 123 | 0 | 23 | 100 | +567 | +567 |
| 824 Bonneville Point* | 315 | 63 | 0 | 0 | 378 | 0 | 3 | 375 | - 28 | + 16 |
| 825 Sunnyside Spring-Fall* | 20,065 | 282 | 0 | 0 | 20,347 | 0 | 0 | 20,347 | - 15 | + 73 |
| 826 Sunnyside Winter* | 13,711 | 0 | 0 | 0 | 13,711 | 0 | 6 | 13,705 | - 5 | + 15 |
| 827 Rattlesnake Seeding* | 1,672 | 28 | 0 | 0 | 1,700 | 0 | 0 | 1,700 | + 24 | + 31 |
| 828 Crater Ring Seeding* | 398 | 241 | 0 | 0 | 639 | 0 | 0 | 639 | - 15 | - 5 |
| 829 2+ Custodial* | 260 | 24 | 0 | 0 | 284 | 0 | 9 | 275 | + 36 | +293 |
| 830 Section 34* | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 |
| 831 Sheep Creek* | 231 | 32 | 0 | 0 | 263 | 0 | 0 | 263 | - 5 | + 14 |
| 832 Duck Ponds* | 56 | 0 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| 833 Section 35* | 17 | 0 | 0 | 0 | 17 | 0 | 0 | 17 | 0 | 0 |
| 834 Rattlesnake Creek* | 223 | 0 | 0 | 0 | 223 | 0 | 3 | 220 | 0 | + 8 |
| 835 West Tacket Creek* | 277 | 16 | 0 | 0 | 293 | 0 | 7 | 286 | + 8 | + 8 |
| 836 Rabbit Spring* | 25 | 10 | 0 | 0 | 35 | 0 | 0 | 35 | - 58 | - 53 |
| 837 Section 1* | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | + 25 | + 25 |
| 838 Melba Seeding* | 322 | 24 | 0 | 0 | 346 | 0 | 0 | 346 | + 15 | + 15 |
| 840 Strickland-Hall-Yates | 3,112 | 364 | 133 | 0 | 3,609 | 0 | 28 | 3,581 | + 34 | |
| 841 Buckhorn* | 652 | 0 | 0 | 0 | 652 | 0 | 1 | 651 | + 53 | |
| 842 M & L | 1,559 | 256 | 0 | 363 | 2,178 | 0 | 7 | 2,171 | + 93 | |
| 843 Simplot | 7,758 | 2,422 | 283 | 2,271 | 12,734 | 0 | 57 | 12,677 | + 25 | + 56** |
| 844 Tindall & Sons | 6,901 | 84 | 133 | 908 | 8,026 | 0 | 30 | 7,996 | + 28 | |
| 845 Antelope Creek | 2,781 | 96 | 150 | 212 | 3,239 | 0 | 13 | 3,226 | + 51 | |
| 846 Alzola | 4,680 | 2,004 | 533 | 545 | 7,762 | 0 | 95 | 7,667 | + 44 | |
| Total | 210,479 | 30,527 | 29,392 | 12,846 | 283,244 | 11,126 | 2,333 | 269,785 | + 15 | + 44 |

* Less intensive allotment
1/ Includes forage not allocated because of lack of water and/or conflicts with wilderness recommendations.

## Appendix Table B-9
## 20-Year Range Condition Class - Continue Present Management (in Acres)

| Allotment | | Poor | Fair | Good | Excellent | Treated | Total |
|---|---|---|---|---|---|---|---|
| 524 | Garat Individual | 564 | 399 | 0 | 0 | 0 | 963 |
| 584 | Garat | 116,287 | 68,954 | 20,020 | 0 | 1,958 | 207,219 |
| 629 | "45" | 79,618 | 8,073 | 35,729 | 0 | 0 | 123,420 |
| 636 | Roaring Springs | 3,660 | 0 | 0 | 0 | 0 | 3,660 |
| 801 | Castle Creek | 155,429 | 27,146 | 16,295 | 0 | 1,572 | 200,442 |
| 802 | Battle Creek | 59,377 | 55,838 | 31,187 | 327 | 2,182 | 148,911 |
| 803 | Big Springs | 67,363 | 96,208 | 29,981 | 0 | 0 | 192,552 |
| 804 | Bennett | 3,771 | 2,537 | 3 | 0 | 0 | 6,311 |
| 805 | Riddle | 99,750 | 70,015 | 20,045 | 0 | 0 | 189,800 |
| 806 | Pole Creek* | 3,480 | 0 | 0 | 0 | 0 | 3,480 |
| 807 | Camas Creek Pocket* | 0 | 71 | 3,425 | 0 | 0 | 3,496 |
| 808 | Northwest | 110,547 | 13,479 | 94,153 | 0 | 13,288 | 231,467 |
| 809 | Center | 40,243 | 5,440 | 28,872 | 3,640 | 45,402 | 123,597 |
| 810 | Scotts Table | 3,099 | 1,881 | 3,307 | 0 | 0 | 8,287 |
| 811 | Canyon View Seeding* | 3,389 | 106 | 340 | 0 | 4,817 | 8,652 |
| 812 | Miller Table Seeding* | 3,927 | 177 | 398 | 0 | 1,593 | 6,095 |
| 813 | Mountain Home Subunit | 33,283 | 936 | 1,737 | 0 | 43,580 | 79,536 |
| 814 | Long Tom Subunit | 7,472 | 4,192 | 7,786 | 0 | 2,982 | 22,432 |
| 815 | Mud Spring | 50 | 0 | 0 | 0 | 10,723 | 10,773 |
| 816 | Lockman Butte* | 931 | 0 | 0 | 0 | 3,182 | 4,113 |
| 817 | Martha Avenue | 1,797 | 0 | 0 | 0 | 6,007 | 7,804 |
| 818 | Ditto Creek | 5,354 | 4,892 | 863 | 0 | 6,925 | 18,034 |
| 819 | Dive Creek | 0 | 798 | 0 | 0 | 4,886 | 5,684 |
| 820 | Cornell | 6,122 | 156 | 0 | 0 | 818 | 7,096 |
| 821 | Chalk Flat* | 3,315 | 0 | 0 | 0 | 9,273 | 12,588 |
| 822 | Slater Flat* | 3,086 | 40 | 0 | 0 | 8,091 | 11,217 |
| 823 | McConnell* | 128 | 0 | 2,194 | 0 | 1,558 | 3,880 |
| 824 | Bonneville Point* | 1,674 | 28 | 0 | 0 | 814 | 2,516 |
| 825 | Sunnyside Spring-Fall* | 88,320 | 0 | 0 | 0 | 89,735 | 178,055 |
| 826 | Sunnyside Winter* | 169,107 | 0 | 0 | 0 | 23,054 | 192,161 |
| 827 | Rattlesnake Seeding* | 0 | 0 | 0 | 0 | 3,504 | 3,504 |
| 828 | Crater Ring Seeding* | 479 | 0 | 0 | 0 | 2,457 | 2,936 |
| 829 | 2+ Custodial* | 452 | 180 | 1,469 | 0 | 0 | 2,101 |
| 830 | Section 34* | 40 | 0 | 0 | 0 | 0 | 40 |
| 831 | Sheep Creek* | 0 | 0 | 0 | 0 | 1,470 | 1,470 |
| 832 | Duck Ponds* | 245 | 0 | 0 | 0 | 0 | 245 |
| 833 | Section 35* | 160 | 0 | 0 | 0 | 0 | 160 |
| 834 | Rattlesnake Creek | 708 | 0 | 0 | 0 | 3,890 | 4,598 |
| 836 | West Tacket Creek* | 0 | 1,598 | 0 | 0 | 242 | 1,840 |
| 837 | Rabbit Springs* | 547 | 0 | 0 | 0 | 0 | 547 |
| 838 | Section 1* | 0 | 0 | 0 | 0 | 40 | 40 |
| 839 | Melba Seeding* | 0 | 0 | 0 | 0 | 1,677 | 1,677 |
| 840 | Strickland-Hall-Yates | 58,623 | 1,561 | 10,736 | 0 | 1,490 | 72,410 |
| 841 | Buckhorn* | 69 | 174 | 2,619 | 0 | 0 | 2,862 |
| 842 | M & L | 9,893 | 391 | 6,277 | 0 | 3,258 | 19,819 |
| 843 | Simplot | 76,935 | 17,277 | 6,787 | 0 | 6,440 | 107,439 |
| 844 | Tindall & Sons | 30,725 | 10,009 | 22,752 | 0 | 1,601 | 65,087 |
| 845 | Antelope Creek | 6,163 | 5,833 | 5,150 | 0 | 3,000 | 20,146 |
| 846 | Alzola | 22,185 | 28,841 | 4,961 | 141 | 1,724 | 56,852 |
| | TOTAL | 1,278,367<br>(54%) | 427,250<br>(18%) | 356,086<br>(15%) | 4,108<br>(<1%) | 313,233<br>(13%) | 2,379,014 |

* Less Intensive Management

# Appendix Table B-10
## 20-Year Range Condition Class - No Livestock Grazing
(in acres)

| Allotment | Poor | Fair | Good | Excellent | Treated | Total |
|---|---|---|---|---|---|---|
| 524 Garat Individual | 47 | 856 | 60 | 0 | 0 | 963 |
| 584 Garat | 25,633 | 105,819 | 70,729 | 3,080 | 1,958 | 207,219 |
| 629 "45" | 22,060 | 60,691 | 38,595 | 2,074 | 0 | 123,420 |
| 636 Roaring Springs | 0 | 435 | 3,225 | 0 | 0 | 3,660 |
| 801 Castle Creek | 80,412 | 77,234 | 38,869 | 2,355 | 1,572 | 200,442 |
| 802 Battle Creek | 40,436 | 27,072 | 75,225 | 3,996 | 2,182 | 148,911 |
| 803 Big Springs | 13,404 | 77,289 | 98,449 | 3,410 | 0 | 192,552 |
| 804 Bennett | 1,313 | 2,620 | 2,378 | 0 | 0 | 6,311 |
| 805 Riddle | 23,343 | 84,996 | 78,377 | 3,084 | 0 | 189,800 |
| 806 Pole Creek* | 2,845 | 635 | 0 | 0 | 0 | 3,480 |
| 807 Camas Creek Pocket* | 0 | 0 | 3,496 | 0 | 0 | 3,496 |
| 808 Northwest | 61,259 | 54,533 | 95,475 | 6,912 | 13,288 | 231,467 |
| 809 Center | 18,715 | 22,587 | 31,376 | 5,517 | 45,402 | 123,597 |
| 810 Scotts Table | 1,737 | 3,410 | 2,842 | 298 | 0 | 8,287 |
| 811 Canyon View Seeding* | 557 | 2,922 | 322 | 34 | 4,817 | 8,652 |
| 812 Miller Table Seeding* | 2,294 | 1,907 | 276 | 25 | 1,593 | 6,095 |
| 813 Mtn. Home Subunit | 17,858 | 17,890 | 209 | 0 | 43,579 | 79,536 |
| 814 Long Tom Subunit | 3,144 | 16,306 | 0 | 0 | 2,982 | 22,432 |
| 815 Mud Springs | 50 | 0 | 0 | 0 | 10,723 | 10,773 |
| 816 Lockman Butte* | 931 | 0 | 0 | 0 | 3,182 | 4,113 |
| 817 Martha Ave. | 1,482 | 315 | 0 | 0 | 6,007 | 7,804 |
| 818 Ditto Creek | 2,863 | 8,246 | 0 | 0 | 6,925 | 18,034 |
| 819 Dive Creek | 0 | 798 | 0 | 0 | 4,886 | 5,684 |
| 820 Cornell | 1,296 | 4,982 | 0 | 0 | 818 | 7,096 |
| 821 Chalk Flat* | 3,315 | 0 | 0 | 0 | 9,273 | 12,588 |
| 822 Slater Flat* | 1,181 | 1,945 | 0 | 0 | 8,091 | 11,217 |
| 823 McConnell* | 58 | 70 | 1,975 | 219 | 1,558 | 3,880 |
| 824 Bonneville Point* | 158 | 1,544 | 0 | 0 | 814 | 2,516 |
| 825 Sunnyside Spring-Fall* | 72,668 | 15,652 | 0 | 0 | 89,735 | 178,055 |
| 826 Sunnyside Winter* | 169,074 | 33 | 0 | 0 | 23,054 | 192,161 |
| 827 Rattlesnake Seeding* | 0 | 0 | 0 | 0 | 3,504 | 3,504 |
| 828 Crater Ring Seeding* | 479 | 0 | 0 | 0 | 2,457 | 2,936 |
| 829 2+ Custodial* | 139 | 686 | 1,162 | 114 | 0 | 2,101 |
| 830 Section 34* | 28 | 12 | 0 | 0 | 0 | 40 |
| 831 Sheep Creek* | 0 | 0 | 0 | 0 | 1,470 | 1,470 |
| 832 Duck Ponds* | 245 | 0 | 0 | 0 | 0 | 245 |
| 833 Section 35* | 112 | 48 | 0 | 0 | 0 | 160 |
| 834 Rattlesnake Creek* | 708 | 0 | 0 | 0 | 3,890 | 4,598 |
| 836 West Tacket Creek* | 0 | 1,598 | 0 | 0 | 242 | 1,840 |
| 837 Rabbit Springs* | 547 | 0 | 0 | 0 | 0 | 547 |
| 838 Section 1* | 0 | 0 | 0 | 0 | 40 | 40 |
| 839 Melba Seeding* | 0 | 0 | 0 | 0 | 1,677 | 1,677 |
| 840 Strickland-Hall-Yates | 53,448 | 5,643 | 10,783 | 1,046 | 1,490 | 72,410 |
| 841 Buckhorn* | 11 | 96 | 2,507 | 248 | 0 | 2,862 |
| 842 M & L | 9,075 | 908 | 5,982 | 596 | 3,258 | 19,819 |
| 843 Simplot | 74,400 | 7,266 | 18,428 | 905 | 6,440 | 107,439 |
| 844 Tindall & Sons | 24,941 | 16,593 | 19,677 | 2,275 | 1,601 | 65,087 |
| 845 Antelope Creek | 1,734 | 5,132 | 9,959 | 321 | 3,000 | 20,146 |
| 846 Alzola | 11,512 | 26,276 | 17,615 | 725 | 1,724 | 57,852 |
| Total | 745,512<br>(31%) | 655,045<br>(28%) | 627,991<br>(26%) | 37,234<br>(2%) | 313,232<br>(13%) | 2,379,014 |

* Less intensive allotment.

## Appendix Table B-11
## 20-Year Range Condition Class - Reduced Livestock Use
(acres)

| Allotment | | Poor | Fair | Good | Excellent | Treated | Total |
|---|---|---|---|---|---|---|---|
| 524 | Garat Individual | 47 | 356 | 560 | 0 | 0 | 963 |
| 584 | Garat | 54,881 | 96,660 | 53,180 | 0 | 2,498 | 207,219 |
| 629 | "45" | 24,218 | 68,465 | 30,737 | 0 | 0 | 123,420 |
| 636 | Roaring Springs | 328 | 2,687 | 645 | 0 | 0 | 3,660 |
| 801 | Castle Creek | 69,212 | 75,234 | 43,224 | 0 | 12,772 | 200,442 |
| 802 | Battle Creek | 38,636 | 16,272 | 89,694 | 327 | 3,982 | 148,911 |
| 803 | Big Springs | 13,004 | 68,489 | 110,659 | 0 | 400 | 192,552 |
| 804 | Bennett | 313 | 1,720 | 3,278 | 0 | 1,000 | 6,311 |
| 805 | Riddle | 13,643 | 72,996 | 93,461 | 0 | 9,700 | 189,800 |
| 806 | Pole Creek* | 3,353 | 127 | 0 | 0 | 0 | 3,480 |
| 807 | Camas Creek Pocket* | 0 | 124 | 3,372 | 0 | 0 | 3,496 |
| 808 | Northwest | 85,903 | 49,278 | 82,298 | 0 | 13,988 | 231,467 |
| 809 | Center | 29,479 | 20,003 | 25,073 | 3,640 | 45,402 | 123,597 |
| 810 | Scotts Table | 2,418 | 2,960 | 2,909 | 0 | 0 | 8,287 |
| 811 | Canyon View Seeding* | 3,055 | 437 | 343 | 0 | 4,817 | 8,652 |
| 812 | Miller Table Seeding* | 2,500 | 639 | 263 | 0 | 2,693 | 6,095 |
| 813 | Mtn. Home Subunit | 29,573 | 5,542 | 842 | 0 | 43,579 | 79,536 |
| 814 | Long Tom Subunit | 5,308 | 14,142 | 0 | 0 | 2,982 | 22,432 |
| 815 | Mud Springs | 50 | 0 | 0 | 0 | 10,723 | 10,773 |
| 816 | Lockman Butte* | 931 | 0 | 0 | 0 | 3,182 | 4,113 |
| 817 | Martha Ave. | 882 | 315 | 0 | 0 | 6,607 | 7,804 |
| 818 | Ditto Creek | 2,863 | 8,246 | 0 | 0 | 6,925 | 18,034 |
| 819 | Dive Creek | 0 | 798 | 0 | 0 | 4,886 | 5,684 |
| 820 | Cornell | 2,497 | 2,681 | 0 | 0 | 1,918 | 7,096 |
| 821 | Chalk Flat* | 3,315 | 0 | 0 | 0 | 9,273 | 12,588 |
| 822 | Slater Flat* | 1,181 | 1,945 | 0 | 0 | 8,091 | 11,217 |
| 823 | McConnell* | 58 | 70 | 2,194 | 0 | 1,558 | 3,880 |
| 824 | Bonneville Point* | 158 | 1,544 | 0 | 0 | 814 | 2,516 |
| 825 | Sunnyside Spring-Fall* | 85,190 | 3,130 | 0 | 0 | 89,735 | 178,055 |
| 826 | Sunnyside Winter* | 169,074 | 33 | 0 | 0 | 23,054 | 192,161 |
| 827 | Rattlesnake Seeding* | 0 | 0 | 0 | 0 | 3,504 | 3,504 |
| 828 | Crater Ring Seeding* | 479 | 0 | 0 | 0 | 2,457 | 2,936 |
| 829 | 2+ Custodial* | 389 | 548 | 1,164 | 0 | 0 | 2,101 |
| 830 | Section 34* | 28 | 12 | 0 | 0 | 0 | 40 |
| 831 | Sheep Creek* | 0 | 0 | 0 | 0 | 1,470 | 1,470 |
| 832 | Duck Ponds* | 245 | 0 | 0 | 0 | 0 | 245 |
| 833 | Section 35* | 112 | 48 | 0 | 0 | 0 | 160 |
| 834 | Rattlesnake Creek* | 708 | 0 | 0 | 0 | 3,890 | 4,598 |
| 836 | West Tacket Creek* | 0 | 1,598 | 0 | 0 | 242 | 1,840 |
| 837 | Rabbit Springs* | 547 | 0 | 0 | 0 | 0 | 547 |
| 838 | Section 1* | 0 | 0 | 0 | 0 | 40 | 40 |
| 839 | Melba Seeding* | 0 | 0 | 0 | 0 | 1,677 | 1,677 |
| 840 | Strickland-Hall-Yates | 56,036 | 3,216 | 11,668 | 0 | 1,490 | 72,410 |
| 841 | Buckhorn | 40 | 82 | 2,740 | 0 | 0 | 2,862 |
| 842 | M & L | 8,284 | 511 | 6,566 | 0 | 4,458 | 19,819 |
| 843 | Simplot | 66,900 | 5,566 | 21,033 | 0 | 13,940 | 107,439 |
| 844 | Tindall & Sons | 27,833 | 9,163 | 23,490 | 0 | 4,601 | 65,087 |
| 845 | Antelope Creek | 3,949 | 5,915 | 6,582 | 0 | 3,700 | 20,146 |
| 846 | Alzola | 9,712 | 23,076 | 21,399 | 141 | 3,524 | 57,852 |
| | Total | 817,332 | 564,628 | 637,374 | 4,108 | 355,572 | 2,379,014 |
| | Percent | (34%) | (24%) | (27%) | (<1%) | (15%) | |

* Less intensive allotment.

## Appendix Table B-12
## 20 Year AUM Projection - Reduced Livestock Grazing

| Allotment | Initial Forage Production | Increased Above Initial Forage Production (AUM's) | | | Total Forage Production | Forage Not Allocated 1/ | Wild-life Allo-cation | Livestock Allocation | % Change From | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Grazing Management | Brush Control | Brush Control and Seeding | | | | | Active Pre-ference | 5-Year Licensed Use |
| 524 Garat Individual | 44 | 9 | 0 | 0 | 53 | 0 | 0 | 53 | - 34 | - 34 |
| 584 Garat | 14,012 | 3,577 | 12,509 | 142 | 30,240 | 3,584 | 342 | 26,314 | - 21 | + 18 |
| 629 "45" | 8,098 | 809 | 1,090 | 0 | 9,997 | 4,870 | 208 | 4,919 | + 28 | + 28 |
| 636 Roaring Springs | 313 | 83 | 0 | 0 | 396 | 0 | 0 | 396 | - 8 | + 42 |
| 801 Castle Creek | 14,478 | 2,724 | 333 | 3,391 | 20,926 | 1,801 | 78 | 19,047 | - 15 | - 12 |
| 802 Battle Creek | 12,157 | 3,462 | 1,800 | 545 | 17,964 | 4,324 | 206 | 13,434 | 0 | 0 |
| 803 Big Springs | 14,648 | 4,222 | 1,467 | 121 | 20,458 | 3,471 | 394 | 16,593 | - 7 | + 2 |
| 804 Bennett | 644 | 0 | 225 | 333 | 1,202 | 0 | 3 | 1,199 | + 25 | + 67 |
| 805 Riddle | 15,091 | 6,073 | 2,000 | 2,937 | 26,101 | 3,535 | 232 | 22,334 | + 25 | + 37 |
| 806 Pole Creek* | 128 | 14 | 0 | 0 | 142 | 0 | 0 | 142 | - 9 | + 14 |
| 807 Camas Creek Pocket* | 529 | 0 | 0 | 0 | 529 | 0 | 4 | 525 | + 40 | + 40 |
| 808 Northwest | 20,034 | 3,143 | 200 | 212 | 23,589 | 6,142 | 158 | 17,289 | + 29 | + 67 |
| 809 Center | 17,816 | 2,628 | 133 | 0 | 20,577 | 3,016 | 42 | 17,519 | +163 | +197 |
| 810 Scotts Table | 677 | 447 | 0 | 0 | 1,124 | 698 | 30 | 396 | - 31 | - 31 |
| 811 Canyon View Seeding* | 1,741 | 45 | 0 | 0 | 1,786 | 0 | 6 | 1,780 | - 22 | +113 |
| 812 Miller Table Seeding* | 986 | 32 | 0 | 333 | 1,351 | 0 | 6 | 1,345 | + 82 | + 96 |
| 813 Mountain Home Subunit | 10,447 | 548 | 133 | 0 | 11,128 | 0 | 93 | 11,035 | + 18 | + 71 |
| 814 Long Tom Subunit | 3,416 | 686 | 267 | 0 | 4,369 | 797 | 88 | 3,484 | + 11 | + 70 |
| 815 Mud Springs | 1,809 | 607 | 0 | 0 | 2,416 | 0 | 9 | 2,407 | + 59 | + 84 |
| 816 Lockman Butte* | 542 | 30 | 0 | 0 | 572 | 0 | 0 | 572 | + 6 | + 6 |
| 817 Martha Avenue | 871 | 543 | 0 | 200 | 1,614 | 0 | 0 | 1,614 | + 85 | +107 |
| 818 Ditto Creek | 2,227 | 832 | 0 | 0 | 3,059 | 0 | 99 | 2,960 | + 39 | + 65 |
| 819 Dive Creek | 476 | 20 | 0 | 0 | 496 | 0 | 35 | 461 | + 47 | - 4 |
| 820 Cornell | 792 | 99 | 83 | 333 | 1,307 | 0 | 18 | 1,289 | - 2 | + 21 |
| 821 Chalk Flat* | 2,145 | 521 | 0 | 0 | 2,666 | 0 | 0 | 2,666 | + 6 | + 23 |
| 822 Slater Flat* | 1,200 | 0 | 0 | 0 | 1,200 | 0 | 0 | 1,200 | - 54 | 0 |
| 823 McConnell* | 123 | 0 | 0 | 0 | 123 | 0 | 23 | 100 | +567 | +567 |
| 824 Bonneville Point* | 315 | 63 | 0 | 0 | 378 | 0 | 3 | 375 | - 28 | + 16 |
| 825 Sunnyside Spring-Fall* | 20,065 | 282 | 0 | 0 | 20,347 | 0 | 0 | 20,347 | - 15 | + 73 |
| 826 Sunnyside Winter* | 13,711 | 0 | 0 | 0 | 13,711 | 0 | 6 | 13,705 | - 5 | + 15 |
| 827 Rattlesnake Seeding* | 1,672 | 28 | 0 | 0 | 1,700 | 0 | 0 | 1,700 | + 24 | + 31 |
| 828 Crater Ring Seeding* | 398 | 241 | 0 | 0 | 639 | 0 | 0 | 639 | - 15 | - 5 |
| 829 2+ Custodial* | 260 | 24 | 0 | 0 | 284 | 0 | 9 | 275 | + 36 | +293 |
| 830 Section 34* | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 |
| 831 Sheep Creek* | 231 | 32 | 0 | 0 | 263 | 0 | 0 | 263 | - 5 | + 14 |
| 832 Duck Ponds* | 56 | 0 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| 833 Section 35* | 17 | 0 | 0 | 0 | 17 | 0 | 0 | 17 | 0 | 0 |
| 834 Rattlesnake Creek* | 223 | 0 | 0 | 0 | 223 | 0 | 3 | 220 | 0 | + 8 |
| 835 West Tacket Creek* | 277 | 16 | 0 | 0 | 293 | 0 | 7 | 286 | + 8 | + 8 |
| 836 Rabbit Spring* | 25 | 10 | 0 | 0 | 35 | 0 | 0 | 35 | - 58 | - 53 |
| 837 Section 1* | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | + 25 | + 25 |
| 838 Melba Seeding* | 322 | 24 | 0 | 0 | 346 | 0 | 0 | 346 | + 15 | + 15 |
| 840 Strickland-Hall-Yates | 3,112 | 1,739 | 133 | 0 | 4,983 | 617 | 28 | 4,338 | + 63 | |
| 841 Buckhorn* | 652 | 0 | 0 | 0 | 652 | 41 | 1 | 610 | + 47 | |
| 842 M & L | 1,559 | 1,411 | 0 | 363 | 3,333 | 548 | 7 | 2,778 | +152 | |
| 843 Simplot | 7,758 | 2,918 | 283 | 2,271 | 13,230 | 2,037 | 57 | 11,136 | + 9 | |
| 844 Tindall & Sons | 6,901 | 370 | 133 | 908 | 8,312 | 1,829 | 30 | 6,453 | + 4 | |
| 845 Antelope Creek | 2,781 | 504 | 150 | 212 | 3,647 | 1,702 | 13 | 1,932 | - 10 | |
| 846 Alzola | 4,680 | 2,085 | 533 | 545 | 7,843 | 1,403 | 95 | 6,345 | + 19 | |
| Total | 210,479 | 40,900 | 21,472 | 12,846 | 285,697 | 40,415 | 2,333 | 242,949 | + 2 | + 28 |

* Less intensive allotment

1/ Includes forage not allocated because of lack of water, 5/16 turnout dates and/or conflicts with wilderness recommendations.

## Appendix Table C-1
## Stream Habitat Condition Rating System

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1) High stream bank cover, % shading | 4 more than 80% shading | 3 60% to 80% shading | 2 40% to 60% shading | 1 less than 40% shading |
| 2) Low stream bank cover | 4 veg. well rooted & over 8", sod intact - no erosion from sodded areas. | 3 veg. mostly over 4", sod mostly intact with less than 10% bare soil with broken sod, some surface erosion. | 2 veg. mostly less than 3" high, less than 20% bare soil, sod broken & surface erosion apparent. | 1 broken sod, over 20% bare soil showing, surface erosion a serious problem. |
| 3) Stream bank stability | 4 less than 5% of banks with active erosion. | 3 5% to 10% of banks with active erosion. | 2 10% to 20% of banks with active erosion. | 1 more than 20% of banks with active erosion. |
| 4) Stream channel stability | 4 no or negligible lateral channel movement & bank erosion, channel scour or changing channels. | 3 up to 5% lateral movement & bank erosion, minor channel scouring & changing channels within stream bed. | 2 up to 10% lateral movement, scouring & redeposition obvious, channel changes occurring. | 1 more than 10% lateral channel movement & bank cutting, channel changes & scouring evident & source of extreme sedimentation. |
| 5) Sedimentation % fine sediments - sand & smaller covering stream bottom. | 4 less than 10% fine sediments. | 3 10% to 15% fine sediments. | 2 15% to 25% fine sediments. | 1 more than 25% fine sediments. |
| 6) In-stream cover-pools, cutbanks, boulders, debris, overhanging veg., velocity breaks or turbulence. | 4 over 50% of stream channel containing in-stream cover. | 3 25% to 50% instream cover, 50% to 75% exposed. | 2 10% to 25% instream cover, 75% to 90% exposed | 1 less than 10% instream cover, over 90% exposed. |
| | Column Total ________ | Column Total ________ | Column Total ________ | Column Total ________ |
| | Total Numerical Score ________ | | Excellent = 22 to 24 | Good = 16 to 21 |
| | Overal Rating ________ ________ | | Fair = 10 to 15 | Poor = 6 to 9 |

# APPENDIX D: ECONOMICS

## Ranch Budgets

An interagency agreement between the Bureau of Land Management, U.S. Forest Service, and the Economics, Statistics, and Cooperative Service (now the Economics and Statistics Service, ESS) was signed in November of 1979. This agreement provided for ESS to collect rancher economic data for the other two agencies to use in their planning, EIS, and range management program documents. Basically, the agreement provided ESS with money to collect ranch budgets for the BLM and Forest Service. The BLM has dropped out of this agreement with the Bruneau-Kuna budgets being the final products received under the terms of the agreement.

The first step in collecting the budgets was to provide ESS with some basic data about the ranching industry in the Bruneau-Kuna area. This included data such as the names of the permittees involved, herd size, class of livestock, season of use, county of residence, active grazing preference on BLM lands, use of other federal lands, and other feed sources. Preliminary budgets were then constructed. These budgets were developed from national survey data, data provided about the local ranching industry, and data from other sources such as extension specialists, lending institutions, universities, or producer organizations. Assumptions used in constructing the budgets were discussed at a meeting of ranchers in Mountain Home on May 28, 1981. Based on all input received, draft budgets were prepared and sent to the BLM and producers in the area. Based on comment received at this stage, the BLM changed the livestock prices used to a 5-year weighted average. The final budgets are shown in Appendix Tables D-1, D-2, and D-3.

## Linear Programming

Linear programming is a computational method to determine the best plan or course of action when there are many alternatives for the plan, a specific or numerical objective exists, and the means for attaining it are limited. Linear programming maximizes or minimizes some objective function. The linear programming analysis for this EIS was done by ESS. The basic input data came from the ranch budgets. The linear programming for this EIS maximized net rancher income with availability of AUMs from BLM lands the primary limiting factor. This analysis was used to calculate the rancher income changes shown in Tables 4-6, 4-16, 4-20 and 4-25.

## Dynamic Regional Analysis Model

Direct impacts (such as changes to ranch income and changes in the construction industry) cause other impacts to occur. For instance, when ranchers have less income, they purchase fewer goods and services in town, thus lowering the merchant's income. This is called the secondary impact. In order to analyze these impacts, a computer model is used which estimates these impacts. It is called the Dynamic Regional Analysis Model (DRYAM). The direct income impacts are entered and the model calculates direct employment, secondary income and employment impacts. The model uses industry earnings in combination with a 20-sector industry expected transaction matrix compiled from the national input-output table in order to estimate net exports or imports by industry for the economy of a given area. Multipliers are computed; they refer to impacts on personal income, not business income. Multipliers are the ratio between the ultimate increase of income arising from an increment of investment and the initial new investment itself. For example, an initial income increase in the livestock industry creates additional (or secondary) increases in both the livestock and other sectors of the economy. A multiplier estimates what this addition would be. With initial income increased by $1,000 and a multiplier of 1.5, the total income increase would be $1,500, with $500 being the additional increase estimated by the multiplier. The detailed mathmatical explanation of DYRAM may be found in the Annals of Regional Science, November 1975, pp. 44-50.

The multiplers calculated by DYRAM which are of interest in this analysis were:

| | |
|---|---|
| Livestock | 1.360 |
| Construction | 1.125 |
| Services | 1.130 |

## Discounting

Since each alternative represents differing mixes of livestock use and construction activities, it was decided to determine the net present worth for each alterntaive. Present worth is the amount of money today which will become a given amount at a stated time in the future. For example, at 10% interest $100 will grow to $110 in one year; therefore, the present worth of $110 one year from now at 10% interest is $100. If the end product is a series of payments, the present worth is the amount that will result in the sum of series. The net present worth of each alternative then, is the sum of the present worths of the income streams associated with livestock, construction, etc. Discounting is the procedure whereby the present worth of future income is determined. The concept is the converse of growth in value due to accrued interest. The Proposed Action and the Alternatives have been discounted to reflect their present worth with an assumed interest rate of 7.125% (established by the Water Resources Council for use by federal agencies in FY 1982).

## Appendix Table D-1
## Costs and Returns for Beef Herds of 99 Cows, BLM, Bruneau-Kuna EIS area, Southwestern Idaho

| Item | Unit | Number | Average Weight | Price Cwt | Total Value |
|---|---|---|---|---|---|
| Sales: | | | | | |
| Steer calves | Head | 10 | 425 | 74.55 | 3,168 |
| Heifer calves | Head | 9 | 375 | 70.42 | 2,377 |
| Yearling steers | Head | 13 | 620 | 64.41 | 5,191 |
| Yearling heifers | Head | 7 | 560 | 57.21 | 2,243 |
| Cull cows | Head | 6 | 900 | 42.21 | 2,279 |
| Total | | | | | 15,258 |
| Total/cow | | | | | 287.89 |

| | Total Value | Value/ Cow |
|---|---|---|
| Cash Costs: | | |
| BLM grazing fee | 585 | 11.04 |
| Private range lease/rent | 640 | 12.07 |
| State lease | 55 | 1.04 |
| Hay (produce) | 2,034 | 38.37 |
| Protein supplement | 167 | 3.15 |
| Salt and mineral | 84 | 1.58 |
| Hauling water | 594 | 11.21 |
| Veterinary and medicine | 246 | 4.64 |
| Hired trucking and marketing | 82 | 1.55 |
| Fuel and lubricants | 1,183 | 22.32 |
| Repairs | 770 | 14.53 |
| Taxes | 1,206 | 22.74 |
| Insurance | 325 | 6.13 |
| Interest on operating capital | 454 | 8.57 |
| General farm overhead | 596 | 11.25 |
| Total cash costs | 9,021 | 170.21 |
| Other Costs: | | |
| Family labor | 2,601 | 49.08 |
| Depreciation | 2,064 | 38.94 |
| Interest on investment other than land | 5,629 | 106.21 |
| Interest on land | 17,503 | 330.25 |
| Total other costs | 27,797 | 524.47 |
| Total all costs | 36,818 | 694.68 |
| Return above cash costs | 6,237 | 117.68 |
| Return above cash costs and family labor | 3,636 | 68.60 |
| Return to total investment | 1,572 | 29.66 |
| Return to land | -4,057 | -76.55 |

## Appendix Table D-2
## Costs and Returns for Beef Herds of 100-499 cows, BLM, Bruneau-Kuna EIS area, Southwestern Idaho

| Item | Unit | Number | Average Weight | Price Cwt | Total Value |
|---|---|---|---|---|---|
| Sales: | | | | | |
| Steer calves | Head | 35 | 425 | 74.55 | 11,089 |
| Heifer calves | Head | 19 | 375 | 70.42 | 5,017 |
| Yearling steers | Head | 56 | 620 | 64.41 | 22,363 |
| Yearling heifers | Head | 38 | 560 | 57.21 | 12,174 |
| Cull cows | Head | 28 | 900 | 42.21 | 10,637 |
| Total | | | | | 61,280 |
| Total/cow | | | | | 252.18 |

| | Total Value | Value/ Cow |
|---|---|---|
| Cash Costs: | | |
| BLM grazing fee | 2,334 | 9.61 |
| Forest grazing fee | 186 | .76 |
| Private range lease/rent | 4,449 | 18.31 |
| State lease | 160 | .66 |
| Hay (produce) | 1,862 | 7.66 |
| Hay (purchase) | 11,796 | 48.55 |
| Protein supplement | 769 | 3.17 |
| Hauling water | 2,722 | 11.20 |
| Salt and mineral | 383 | 1.58 |
| Veterinary and medicine | 741 | 3.05 |
| Hired trucking and marketing | 456 | 1.88 |
| Fuel and lubricants | 3,823 | 15.73 |
| Repairs | 2,843 | 11.70 |
| Taxes | 4,069 | 16.74 |
| Insurance | 1,442 | 5.93 |
| Interest on operating capital | 2,590 | 10.66 |
| General farm overhead | 2,833 | 11.66 |
| Hired labor | 4,037 | 16.61 |
| Total cash costs | 47,495 | 195.45 |
| Other Costs: | | |
| Family labor | 4,033 | 16.60 |
| Depreciation | 7,548 | 31.06 |
| Interest on investsment other than land | 24,921 | 102.56 |
| Interest on land | 58,864 | 242.24 |
| Total other costs | 95,366 | 392.45 |
| Total all costs | 142,861 | 587.91 |
| Return above cash costs | 13,785 | 56.73 |
| Return above cash costs and family labor | 9,752 | 40.13 |
| Return to total investment | 2,204 | 9.07 |
| Return to land | -22,717 | -93.49 |

## Appendix Table D-3
## Costs and Returns for Beef Herds of 500 or More Cows, BLM, Bruneau-Kuna EIS area, Southwestern Idaho

| Item | Unit | Number | Average Weight | Price Cwt | Total Value |
|---|---|---|---|---|---|
| Sales: | | | | | |
| Steer calves | Head | 159 | 425 | 74.55 | 50,377 |
| Heifer calves | Head | 95 | 375 | 70.42 | 25,087 |
| Yearling steers | Head | 294 | 620 | 64.41 | 117,407 |
| Yearling heifers | Head | 187 | 560 | 57.21 | 59,910 |
| Cull cows | Head | 141 | 850 | 42.21 | 50,589 |
| Total | | | | | 303,370 |
| Total/cow | | | | | 246.24 |

| | Total Value | Value/ Cow |
|---|---|---|
| Cash Costs: | | |
| BLM grazing fee | 10,629 | 8.63 |
| Forest grazing fee | 1,299 | 1.05 |
| Private range lease/rent | 24,429 | 19.83 |
| State lease | 754 | .61 |
| Hay (produce) | 10,753 | 8.73 |
| Hay (purchase) | 68,149 | 55.32 |
| Protein supplement | 3,907 | 3.17 |
| Hauling water | 11,827 | 9.60 |
| Salt and mineral | 1,939 | 1.57 |
| Veterinary and medicine | 3,758 | 3.05 |
| Hired trucking | 926 | .75 |
| Marketing | 1,390 | 1.13 |
| Fuel and lubricants | 23,760 | 19.29 |
| Repairs | 17,150 | 13.92 |
| Taxes | 18,270 | 14.83 |
| Insurance | 7,501 | 6.09 |
| Interest on operating capital | 14,323 | 11.63 |
| General farm overhead | 14,356 | 11.65 |
| Hired labor | 30,686 | 24.91 |
| Total cash costs | 265,806 | 215.75 |
| Other Costs: | | |
| Family labor | 10,229 | 8.30 |
| Depreciation | 33,923 | 27.53 |
| Interest on investment other than land | 129,251 | 104.91 |
| Interest on land | 256,454 | 208.17 |
| Total other costs | 429,857 | 348.91 |
| Total all costs | 695,663 | 564.66 |
| Return above cash costs | 37,564 | 30.49 |
| Return above cash costs and family labor | 27,335 | 22.19 |
| Return to total investment | -6,588 | -5.35 |
| Return to land | -135,839 | -110.26 |

# GLOSSARY

Active Grazing Preference: That portion of the total grazing preference that could be licensed and used should the livestock operator desire.

Activity Occasion: Participation by one person in one activity for all or part of one day.

Adjustments: Changes in animal numbers, season-of-use, kinds or classes of animals, or management practices as warranted by specific conditions.

Adverse Visual Impact: Any impact on the land or water form, vegetation or any introduction of a structure which negatively changes or interrupts the visual character of the landscape and disrupts the harmony of the natural elements.

Allotment: An area designated for use by a prescribed number of livestock and season of use.

Allotment Management Plan (AMP): A documented program which applies to livestock operators on the public lands, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: (1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained yield, economic, and other needs and objectives as determined for the public lands through land use planning; and (2) describes the type, location, ownership, and general specifications for the range improvements to be installed and maintained on the public lands to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorzied officer consistent with applicable law.

Animal Unit Month (AUM): The amount of forage required by one mature cow (1,000 pounds) or the equivalent for one month.

Biological Limit Use Level: The level or degree of grazing that can be allowed without periodic rest treatments and still satisfy plant growth reqirements. The levels vary with vegetation and season-of-use but are normally between 30 and 50 percent.

Brush Control: Reduction of brush to reduce its competition for space, moisture, light and nutrients with more desirable species.

Canopy Cover: The uppermost layer consisting of crowns of trees or shrubs which protect the ground.

Competitive AUM: The cattle AUM equivalent of competitive forage requirements for other grazing hoofed animals.

Contrast Rating System: A method of determining the extent of visual impact of a proposed activity. It measures the combined alteration of line, form, color and texture, from the existing landform, vegetation and structures.

Cultural Resources: Cultural resources include the fragile and non-renewable remains of human behavior as reflected in sites and the components of sites, such as structures, objects and natural features that were utilized in human events. These are further defined as areas where significant human events occurred, even though evidence of the event no longer remains, and as the environment surrounding the actual resource. Cultural resources are commonly discussed in terms of their prehistoric and historic values.

Deferred Rotation Grazing: Discontinuance of grazing on various parts of a range in succeeding years, allowing each part to rest successively during the growing season to permit seed production, establishment of seedlings, or restoration of plant vigor.

Dietary Preference: The selection of certain plants over others by grazing animals.

Dynamic Regional Analysis Model: DYRAM - The model used in determining secondary impacts. It uses industry earnings in combination with a 20 sector industry-expected transition matrix, compiled from the national input-output table, in order to estimate net exports or imports by industry for the economy of a given area. Multipliers for each industry are computed; they refer to impacts on personal income, not business income. The detailed mathematical explanation of the model may be found on file at the Boise District Office or in the Annals of Regional Science, November 1975, pp. 44-50.

Ecological Condition: The present state of vegetation on an ecological site in relation to the climax (natural potential) plant community for that site (Synonomous with range condition).

Ephemeral Range: An area which is composed of mostly annual vegetation.

Erosion Hazard Class: A rating of soils reaction to the force of water. Soil movement tendancies as determined by inherent soil characteristics and topography (specifically K-factors, hydrologic group, and slope).

Fenced Federal Range: Public land fenced out with private land.

Forage: All browse and herbaceous vegetation that is available to grazing animals.

Forage Production: The amount of forage that can be properly used by grazing animals without detriment to the rangeland resource.

Grazing Capacity: The maximum stocking rate possible without inducing damage to vegetation or related resources.

Grazing System: The manipulation of livestock grazing to accomplish a desired result.

Ground Cover: The area of ground covered by the basal portion, living plants, litter or rocks.

Infiltration Rate: The maximum rate at which the soil, under various specified conditions, can absorb falling rain or melting snow.

Intensive Management: The incorporation of specified grazing systems, levels of grazing use, season-of-use and range improvement projects into the management of public lands containing high resource values.

Intrusion: A feature which is generally considered out of context because of excessive contrast and disharmony with the characteristic landscape.

Land Use Plan: A planning decision document which establishes for a given area, land use allocations, coordination guidelines for multiple use and management objectives to be achieved for each class of land use or protection. The BLM's land use plan is called the Management Framework Plan (MFP).

Less Intensive Management: The development of grazing systems to improve the land to a good ecological site condition. This would apply to very small allotments or to those allotments containing large percentages of state or private lands.

Licensed Use: That portion of the active grazing preference authorized or licensed by BLM on a designated area for a period of time.

Management Framework Plan (MFP): See Land Use Plan.

Monitoring: The collection and analysis of data to evaluate rangeland resources on specific areas to determine the effectiveness of actions in meeting management objectives.

Overuse: Utilizing an excessive amount of the current years growth which, if continued, will result in range deterioration or overgrazing.

Palatability: The relish that an animal shows for a particular species, plant or plant part.

Plant Succession: The process of vegetational development whereby an area becomes successively occupied by different plant communities of higher ecological order.

Prey Species: An organism killed and at least partially consumed by a predator. In the case of raptors, the prey is usually a small mammal or reptile (i.e. rabbit, snake, ground squirrel, etc.).

Range Condition: The present state of vegetation on a range site in relation to the climax (natural potential) plant community for that site (Synonomous with ecological condition).

Range Readiness: The stage of growth of the important palatable plants on the range and the condition of the soil which permit grazing without causing excessive soil compaction or endangering the ability of the plants to maintain themselves.

Range Site: An area of land having a combination of soil, climatic, topographic and natural biotic factors that is significantly different from adjacent areas. Changes from one site to another represent significant differences in potential forage production and/or differences in management requirements for proper land use.

Reasonable Numbers: Moderate big game management population levels determined through public input and consultation with the Idaho Department of Fish and Game.

Rest Rotation Grazing: An intensive system of management whereby grazing is deferred on various parts of the range during succeeding years, allowing the deferred part complete rest for one year.

Scenic Quality: The degree of harmony, contrast, and variety within a landscape.

60/40 Cover Ratio: This is a ratio of cover (i.e. overstory, canopy cover, shrubs, trees, etc.) to foraging area - understory forbs and grasses.

Species Composition: The relative proportions of various plant species in the total cover on a given area. It may be expressed in terms of cover, density, weight, etc.

Stocking Rate: Actual number of animals expressed in Animal Unit Months (AUM's) on a specific area at a specific time.

Trend: Change in direction of the vegetation and soil characteristics resulting directly from natural factors, such as climatic or grazing intensity.

Unit Resource Analysis (URA): A basic source of information on a specific area and its resources potential and capability of the land to fill the public's needs for various resource activities including recreation, wildlife, watershed and range management.

Unsuitable Range: An area which has no value for, or which should not be used by, livestock because of steep topography, barrenness, dense timber, lack of forage, or unstable soils.

Vegetation: Plants in general, or the sum total of the plant life in the area.

Vigor: Health of the plant.

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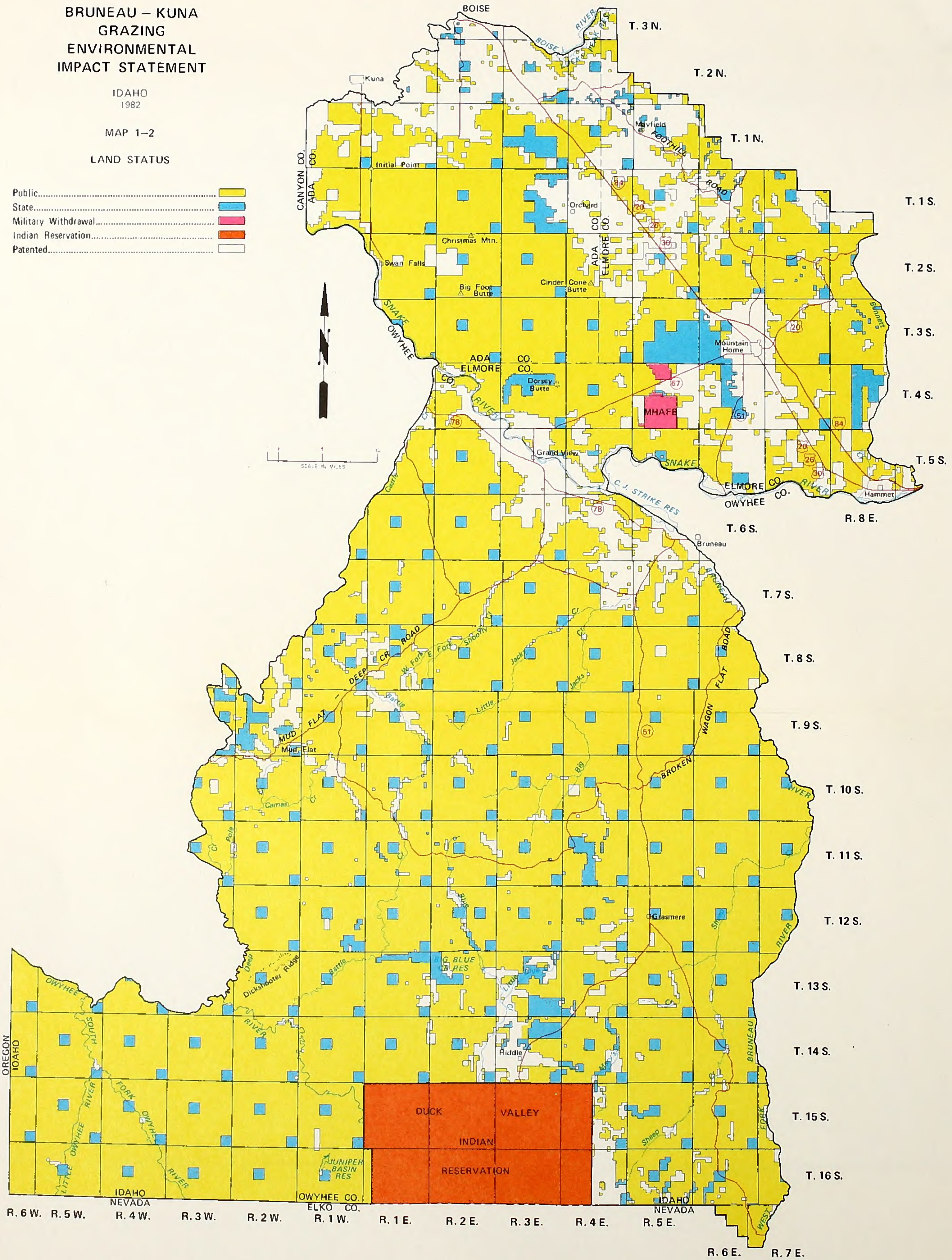
# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

IDAHO
1982

MAP 1–2

LAND STATUS

| | |
|---|---|
| Public | 🟨 |
| State | 🟦 |
| Military Withdrawal | 🟪 |
| Indian Reservation | 🟧 |
| Patented | ⬜ |



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

IDAHO
1982

## MAP 2–1

## GRAZING ALLOTMENTS and SPECIAL MANAGEMENT AREAS

Intensive Management Allotments.......................... 810

Less Intensive Management Allotments.................. 811*

Areas Managed Primarily for Resources Other Than Livestock Grazing

High Potential for Fencing or Grazing Exclusion (Fisheries and Riparian Associated Wildlife)........................................ 🟥

High Potential for Fencing or Grazing Exclusion (Fisheries, Riparian Associated Wildlife and Bighorn Sheep)........................ 🟦

Intensive Grazing Management or Periodic Grazing, Exclusion (Fisheries and Riparian Associated Wildlife)..................................... 🟨

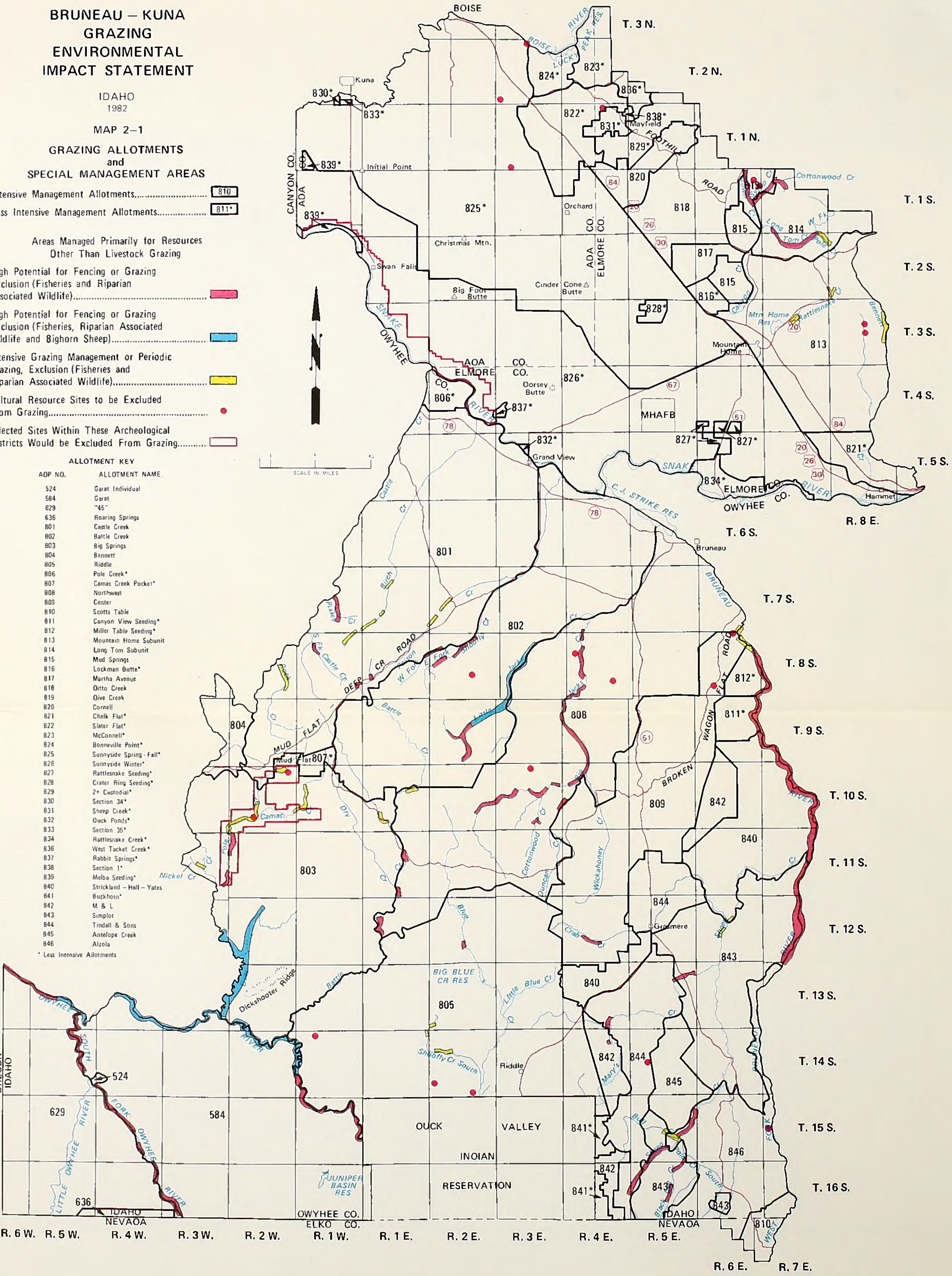
Cultural Resource Sites to be Excluded From Grazing.................................................. ●

Selected Sites Within These Archeological Districts Would be Excluded From Grazing.......... ▭

### ALLOTMENT KEY

| AOP NO. | ALLOTMENT NAME |
|---|---|
| 524 | Garat Individual |
| 584 | Garat |
| 629 | "45" |
| 636 | Roaring Springs |
| 801 | Castle Creek |
| 802 | Battle Creek |
| 803 | Big Springs |
| 804 | Bennett |
| 805 | Riddle |
| 806 | Pole Creek* |
| 807 | Camas Creek Pocket* |
| 808 | Northwest |
| 809 | Center |
| 810 | Scotts Table |
| 811 | Canyon View Seeding* |
| 812 | Miller Table Seeding* |
| 813 | Mountain Home Subunit |
| 814 | Long Tom Subunit |
| 815 | Mud Springs |
| 816 | Lockman Butte* |
| 817 | Martha Avenue |
| 818 | Ditto Creek |
| 819 | Dive Creek |
| 820 | Cornell |
| 821 | Chalk Flat* |
| 822 | Slater Flat* |
| 823 | McConnell* |
| 824 | Bonneville Point* |
| 825 | Sunnyside Spring - Fall* |
| 826 | Sunnyside Winter* |
| 827 | Rattlesnake Seeding* |
| 828 | Crater Ring Seeding* |
| 829 | 2+ Custodial* |
| 830 | Section 34* |
| 831 | Sheep Creek* |
| 832 | Duck Ponds* |
| 833 | Section 35* |
| 834 | Rattlesnake Creek* |
| 836 | West Tacket Creek* |
| 837 | Rabbit Springs* |
| 838 | Section 1* |
| 839 | Melba Seeding* |
| 840 | Strickland – Hall – Yates |
| 841 | Buckhorn* |
| 842 | M & L |
| 843 | Simplot |
| 844 | Tindall & Sons |
| 845 | Antelope Creek |
| 846 | Alzola |

* Less Intensive Allotments



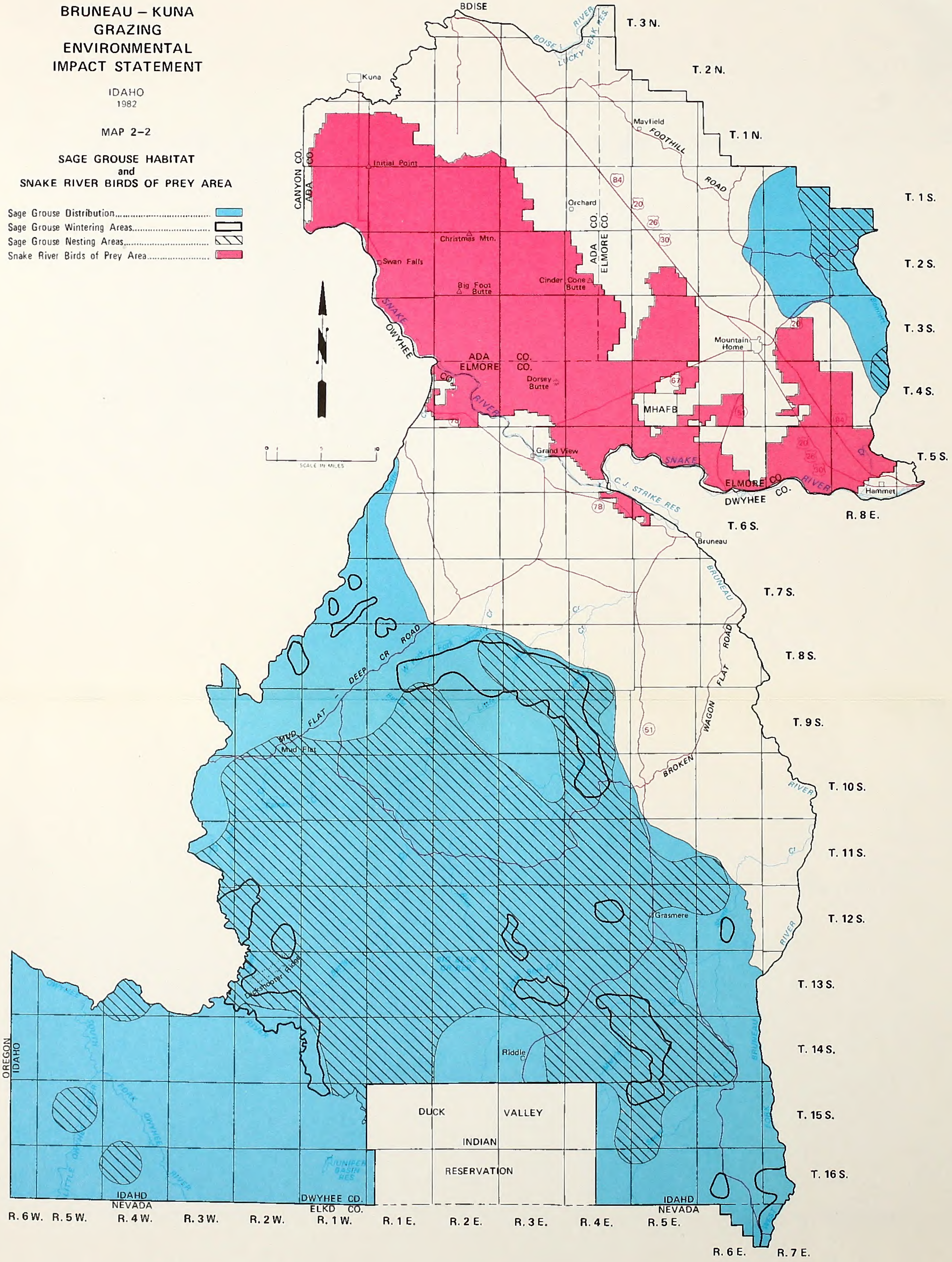
# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

IDAHO
1982

MAP 2–2

## SAGE GROUSE HABITAT and SNAKE RIVER BIRDS OF PREY AREA

| | |
|---|---|
| Sage Grouse Distribution | 🟦 |
| Sage Grouse Wintering Areas | ▭ |
| Sage Grouse Nesting Areas | ▨ |
| Snake River Birds of Prey Area | 🟥 |



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

IDAHO
1982

MAP 2–3

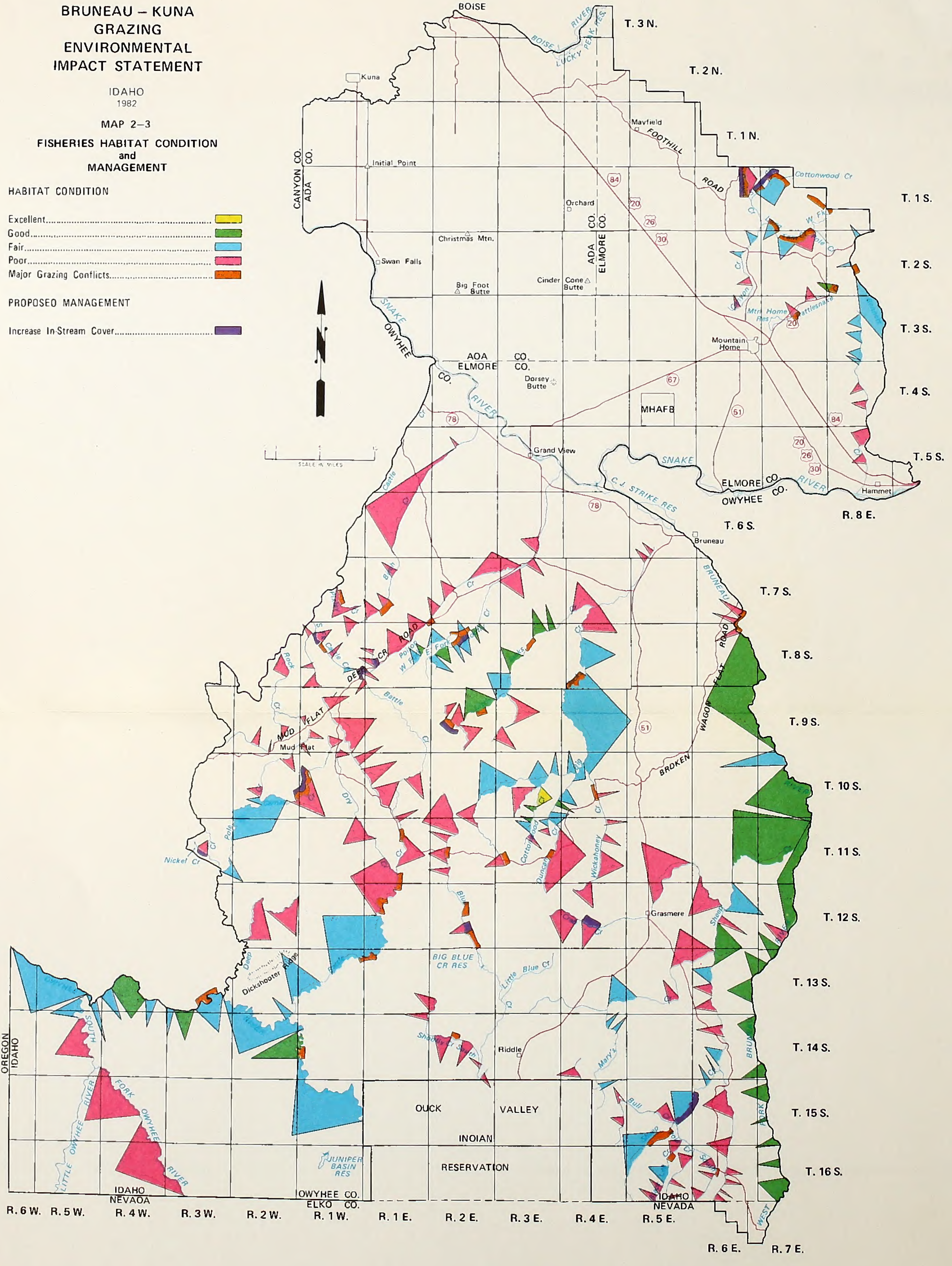
## FISHERIES HABITAT CONDITION and MANAGEMENT

HABITAT CONDITION

Excellent ........ 🟨
Good ........ 🟩
Fair ........ 🟦
Poor ........ 🟥
Major Grazing Conflicts ........ 🟧

PROPOSED MANAGEMENT

Increase In-Stream Cover ........ 🟪

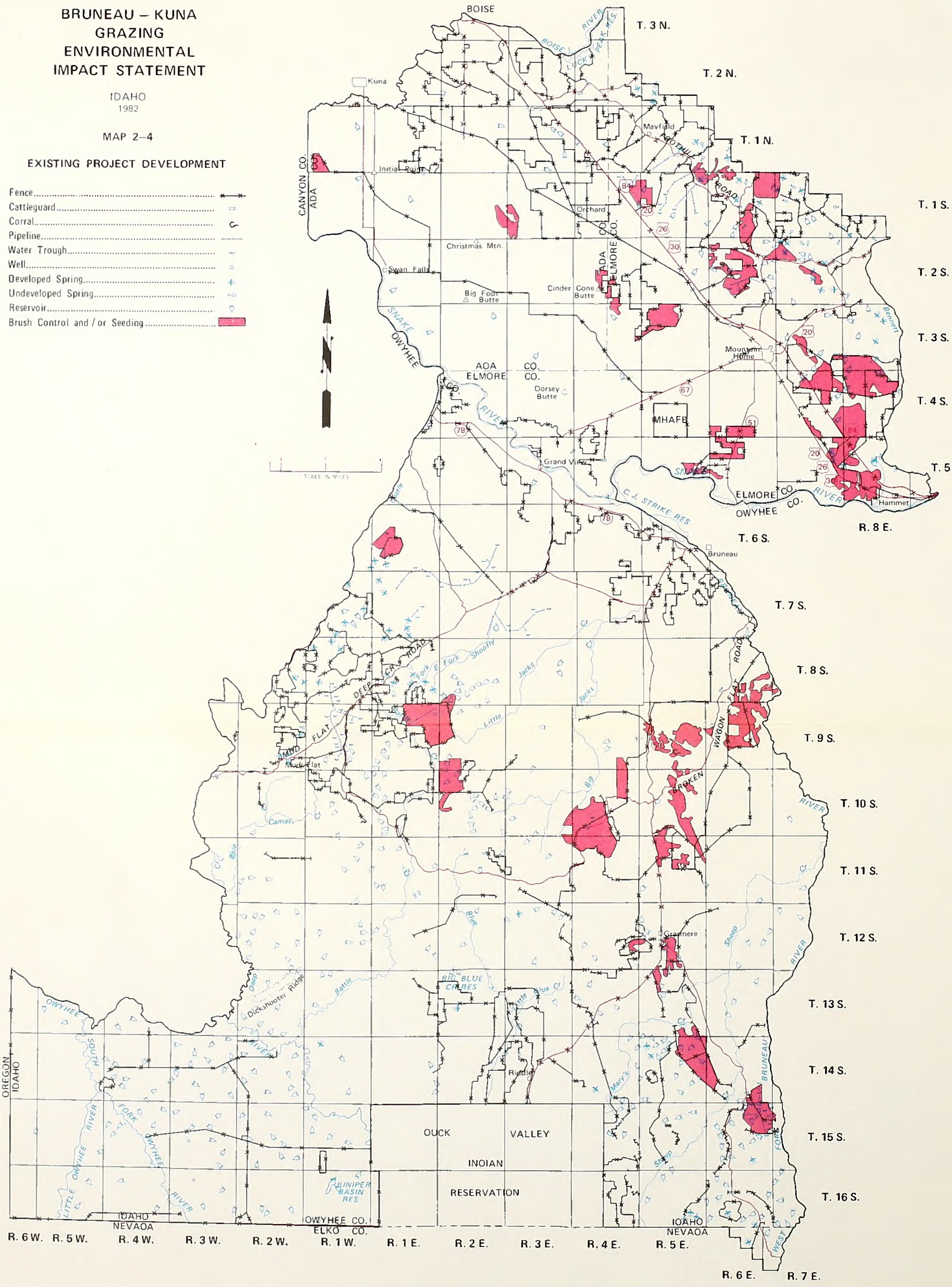


# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

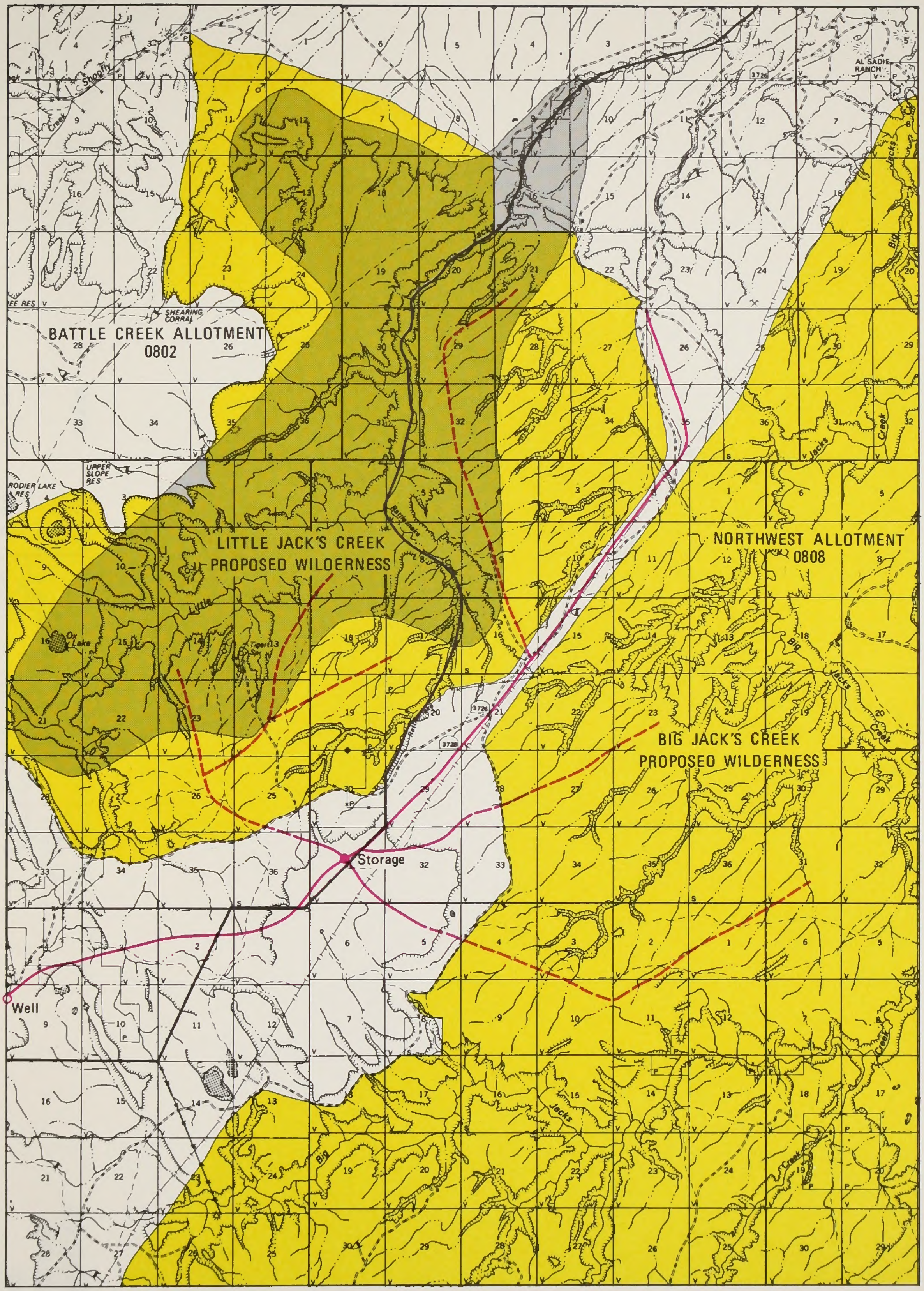
IDAHO
1982

MAP 2–4

## EXISTING PROJECT DEVELOPMENT



| | |
|---|---|
| Fence | —×—×— |
| Cattleguard | ▭ |
| Corral | ↄ |
| Pipeline | — |
| Water Trough | ◡ |
| Well | ○ |
| Developed Spring | + |
| Undeveloped Spring | ◦ |
| Reservoir | ▽ |
| Brush Control and / or Seeding | 🟥 |



## JACK'S CREEK PIPELINE

Existing Bighorn Sheep Area.............................................................................. ▨

Areas Recommended as Suitable for Wilderness.......................................................... 🟨

Allotment Boundary..............................................................................................——

Proposed Action...................................................................................................——

Alternative No. 3...................................................................................................——+– – –

MAP 2–5

# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

IDAHO
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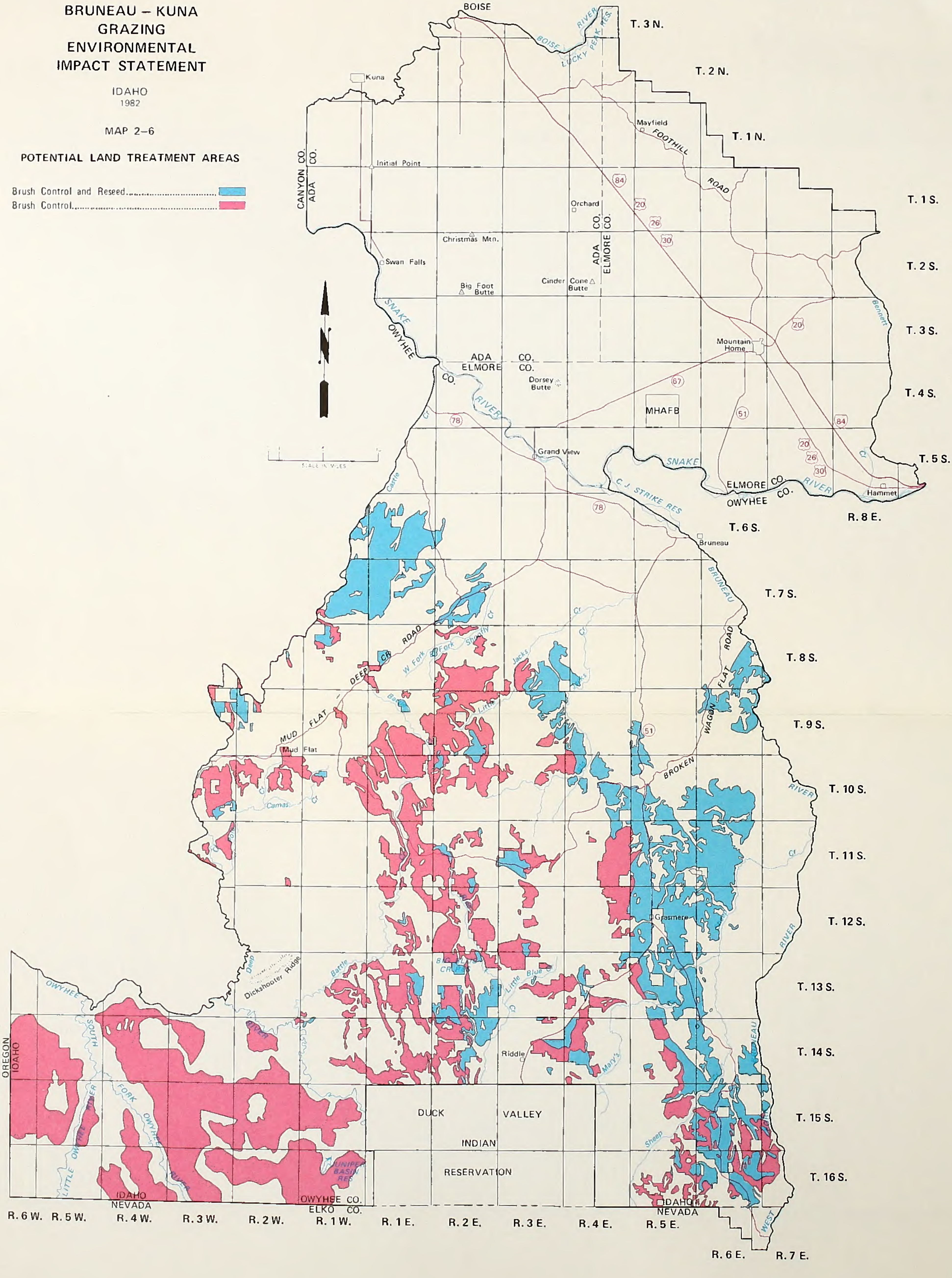
MAP 2–6

## POTENTIAL LAND TREATMENT AREAS

| | |
|---|---|
| Brush Control and Reseed | 🟦 |
| Brush Control | 🟥 |



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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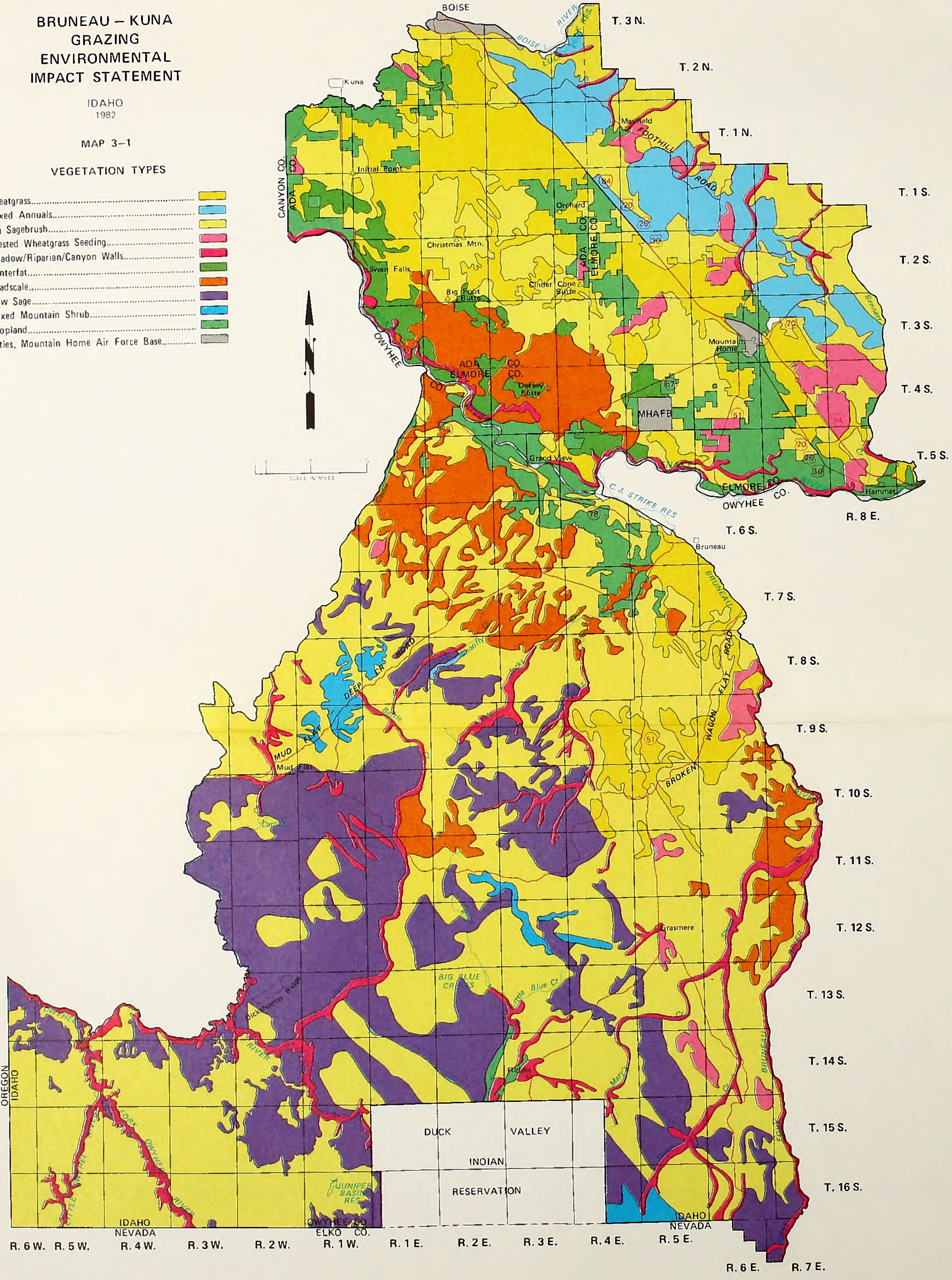
MAP 3–1

VEGETATION TYPES

- Cheatgrass 🟨
- Mixed Annuals 🟦
- Big Sagebrush 🟨
- Crested Wheatgrass Seeding 🟥
- Meadow/Riparian/Canyon Walls 🟥
- Winterfat 🟩
- Shadscale 🟧
- Low Sage 🟪
- Mixed Mountain Shrub 🟦
- Cropland 🟩
- Cities, Mountain Home Air Force Base ⬜



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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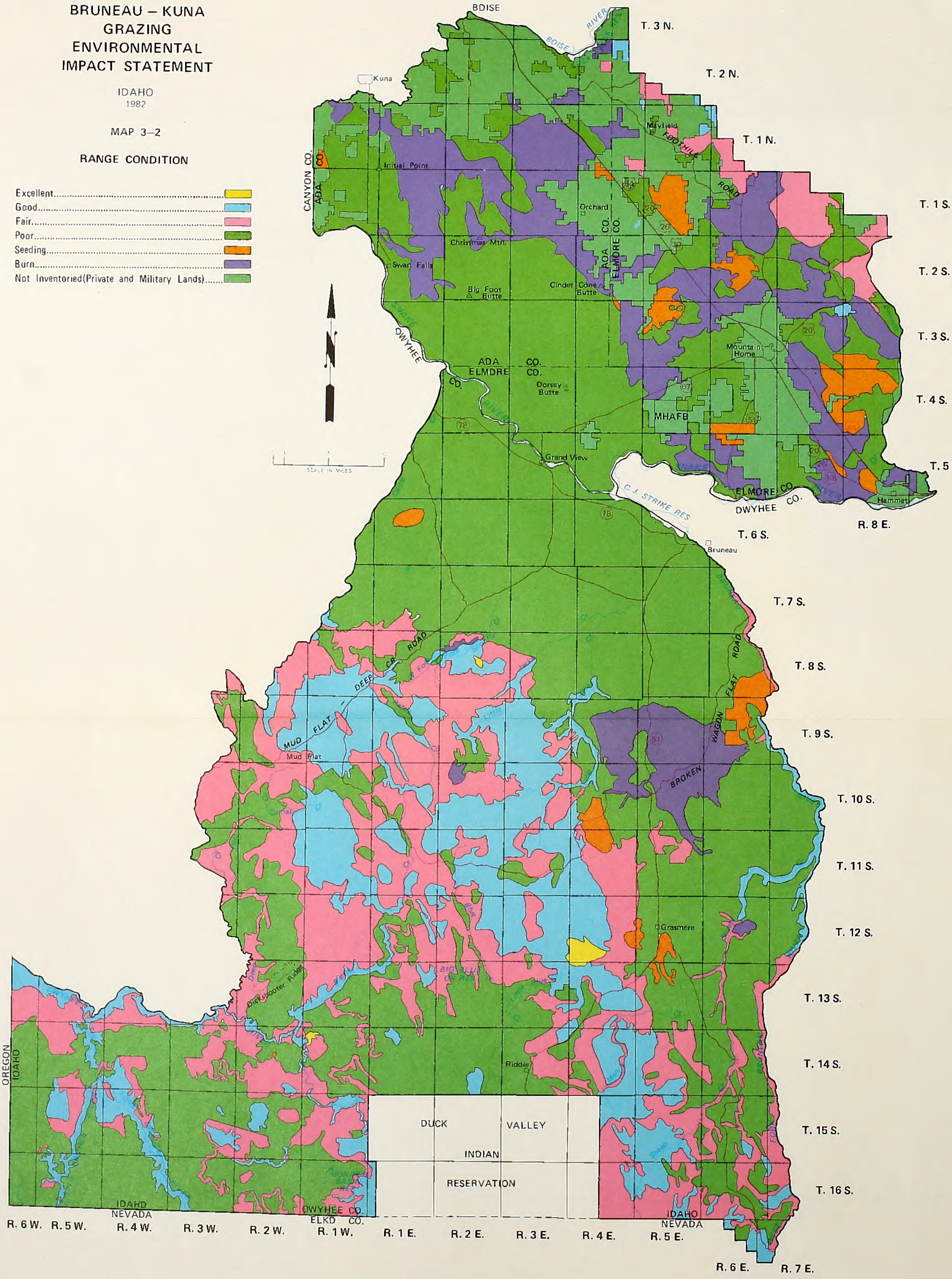
1982

MAP 3–2

## RANGE CONDITION

Excellent 🟨
Good 🟦
Fair 🟥
Poor 🟩
Seeding 🟧
Burn 🟪
Not Inventoried (Private and Military Lands) 🟩



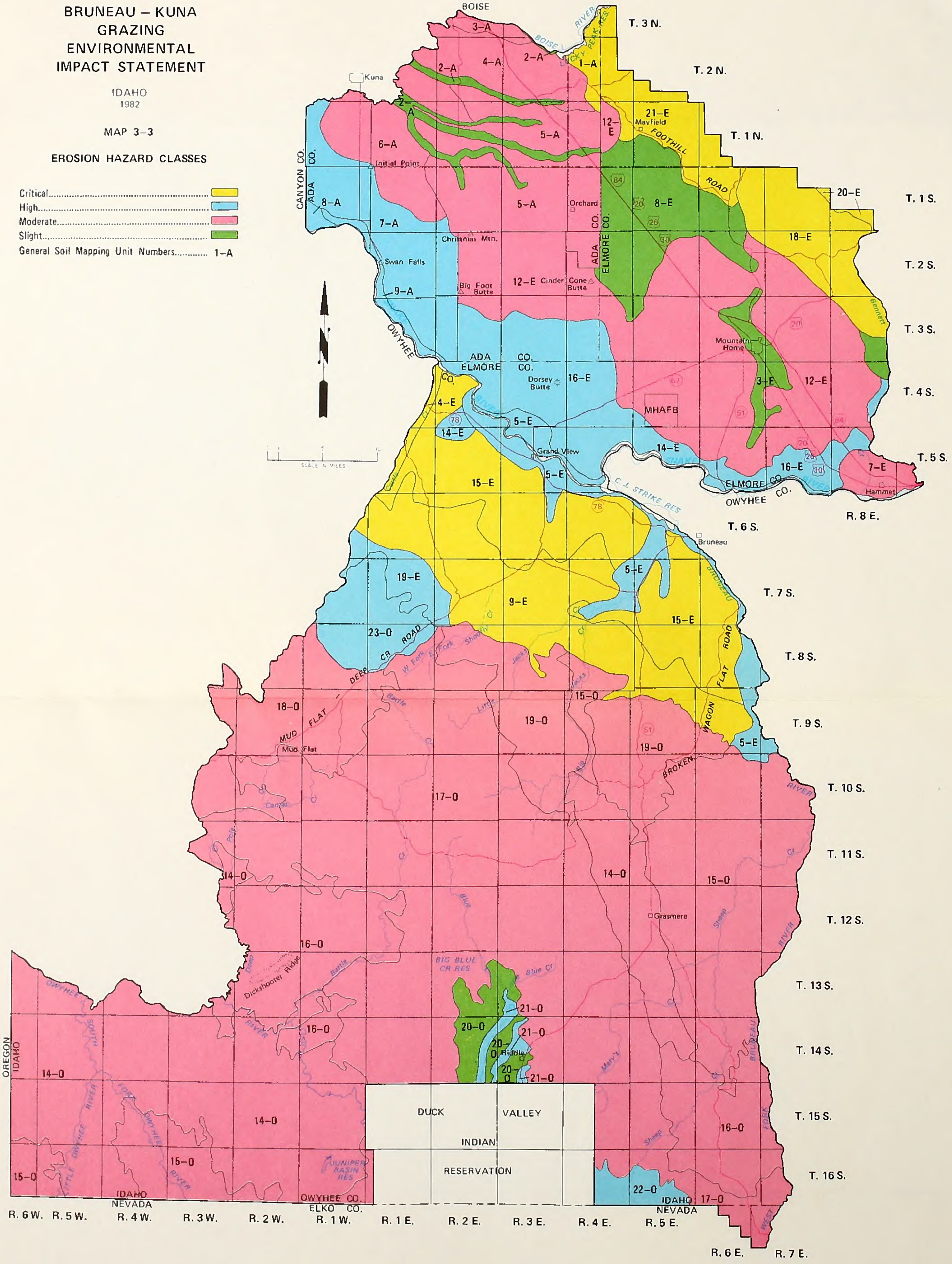
# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

IDAHO
1982

MAP 3–3

## EROSION HAZARD CLASSES

- Critical 🟨
- High 🟦
- Moderate 🟥
- Slight 🟩
- General Soil Mapping Unit Numbers 1–A



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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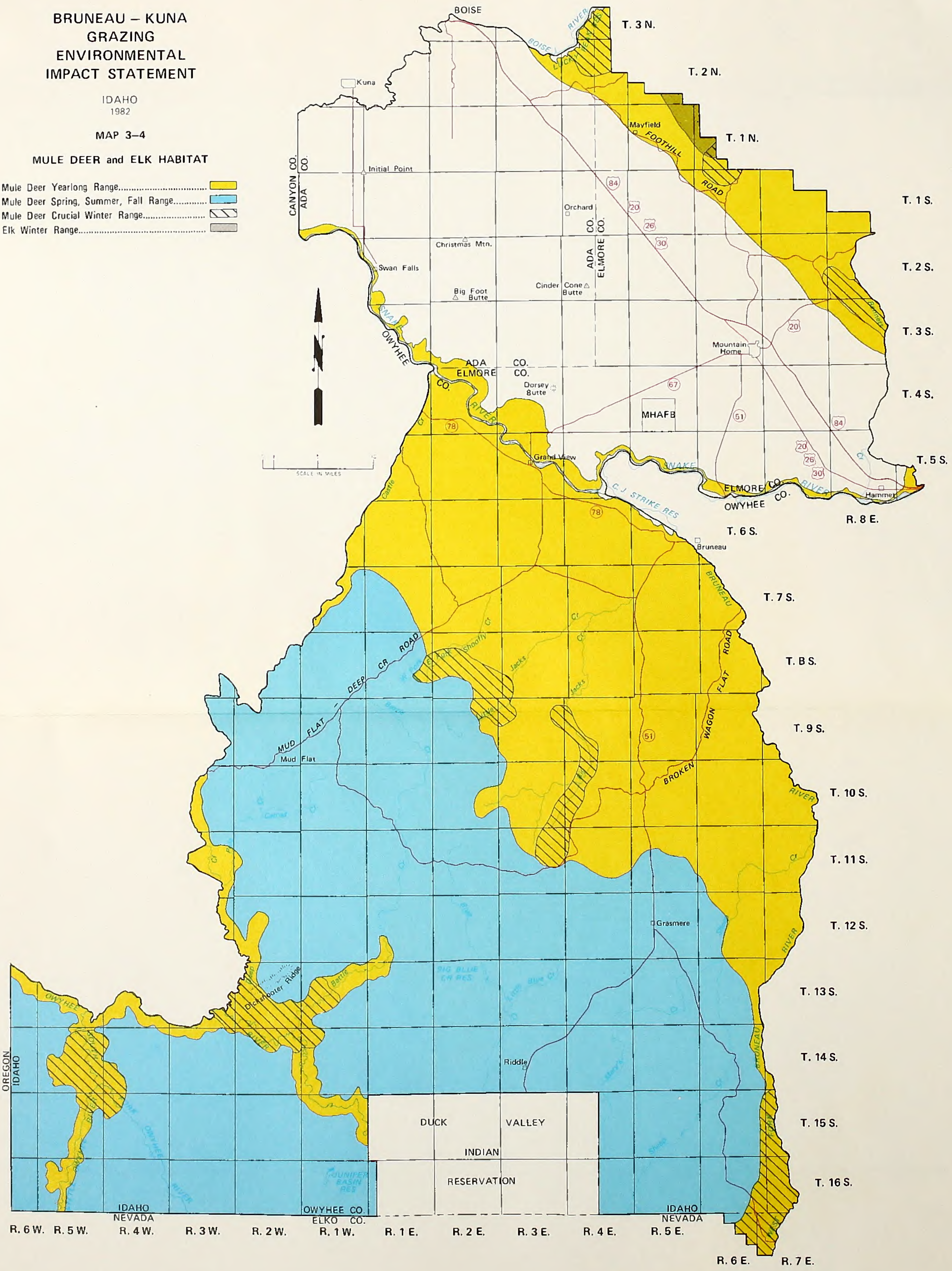
## MAP 3–4

## MULE DEER and ELK HABITAT



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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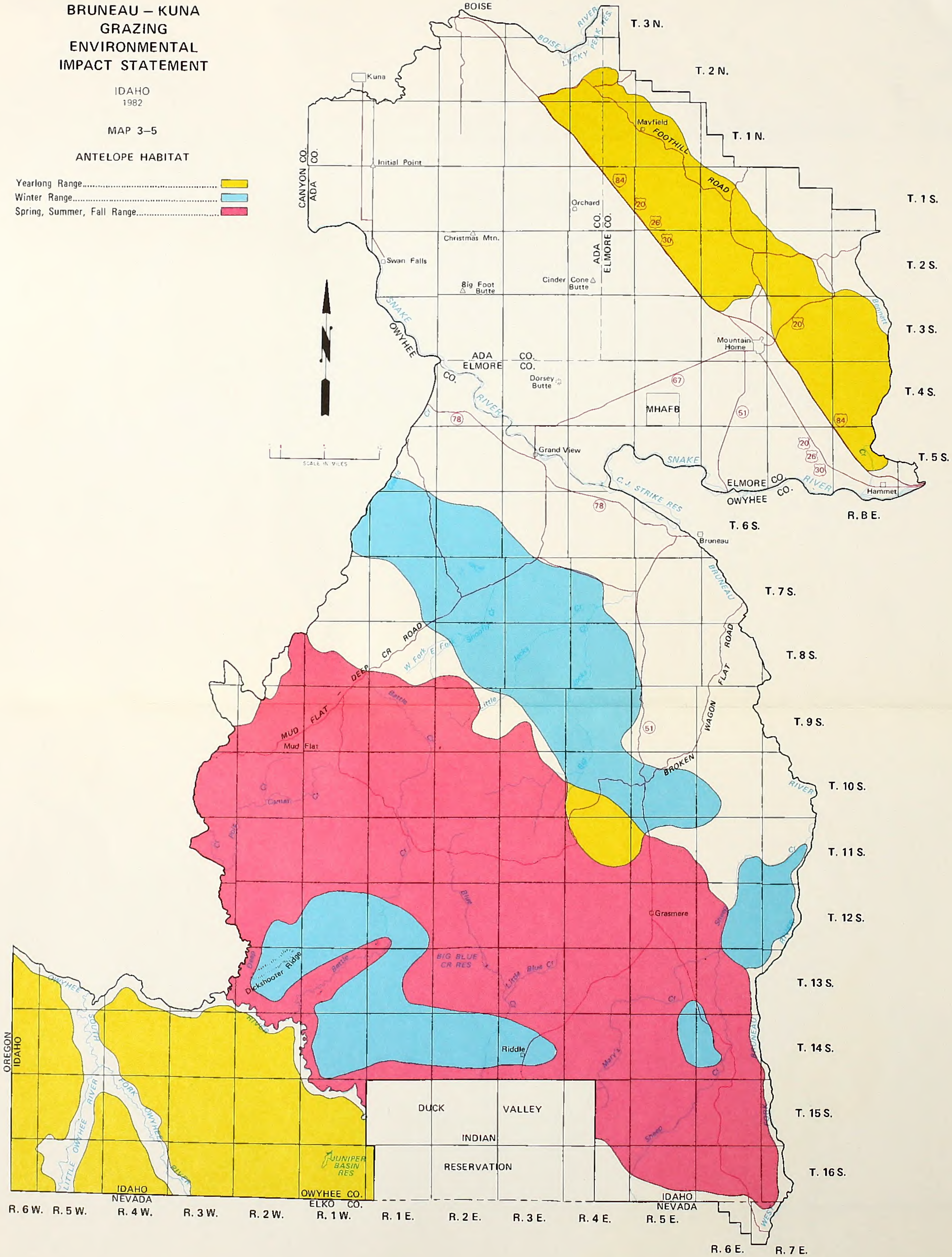
## MAP 3–5

## ANTELOPE HABITAT

- Yearlong Range .......... 🟨
- Winter Range .......... 🟦
- Spring, Summer, Fall Range .......... 🟥



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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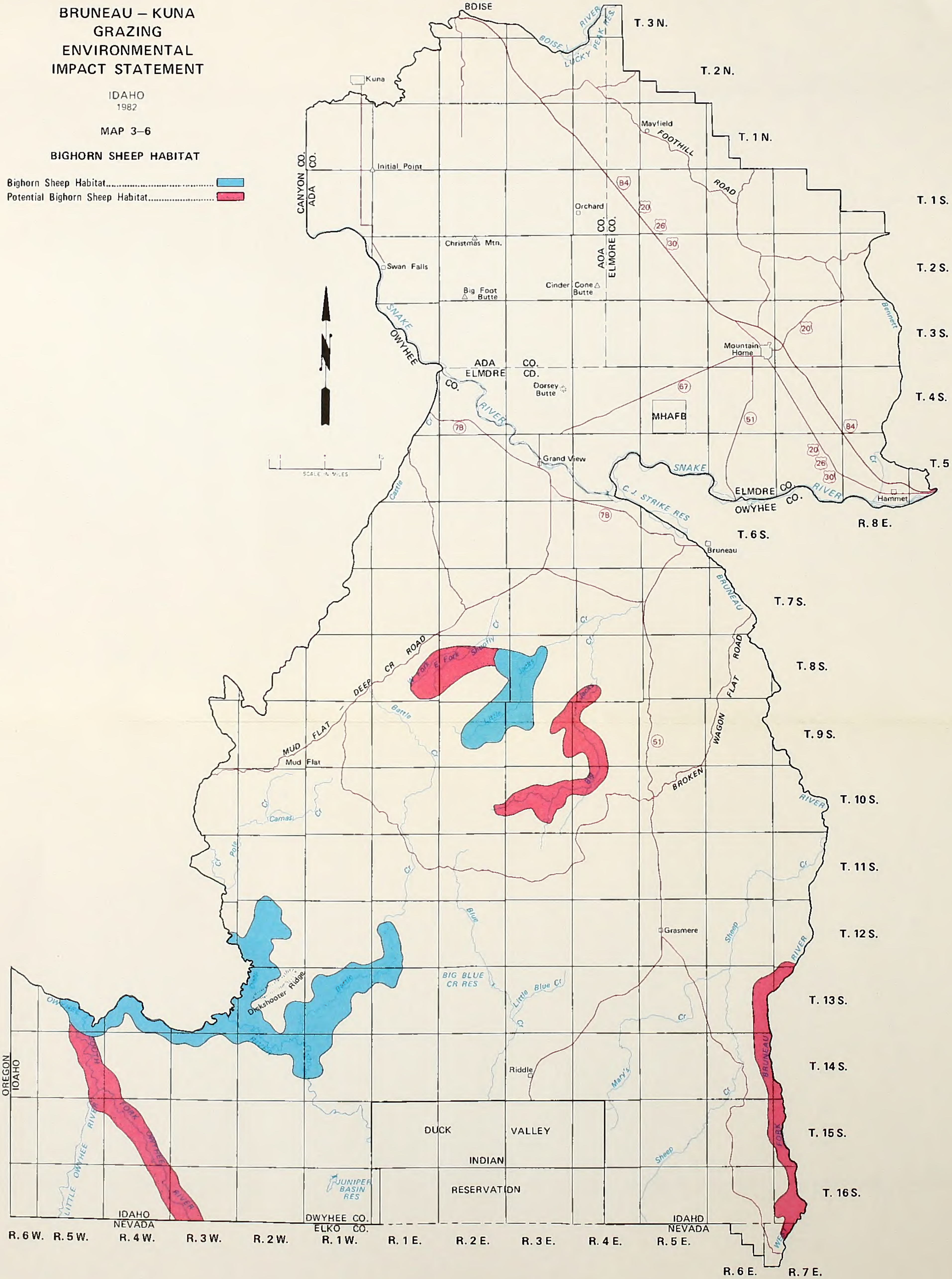
MAP 3–6

BIGHORN SHEEP HABITAT

Bighorn Sheep Habitat.............................. 🟦
Potential Bighorn Sheep Habitat.......................... 🟥



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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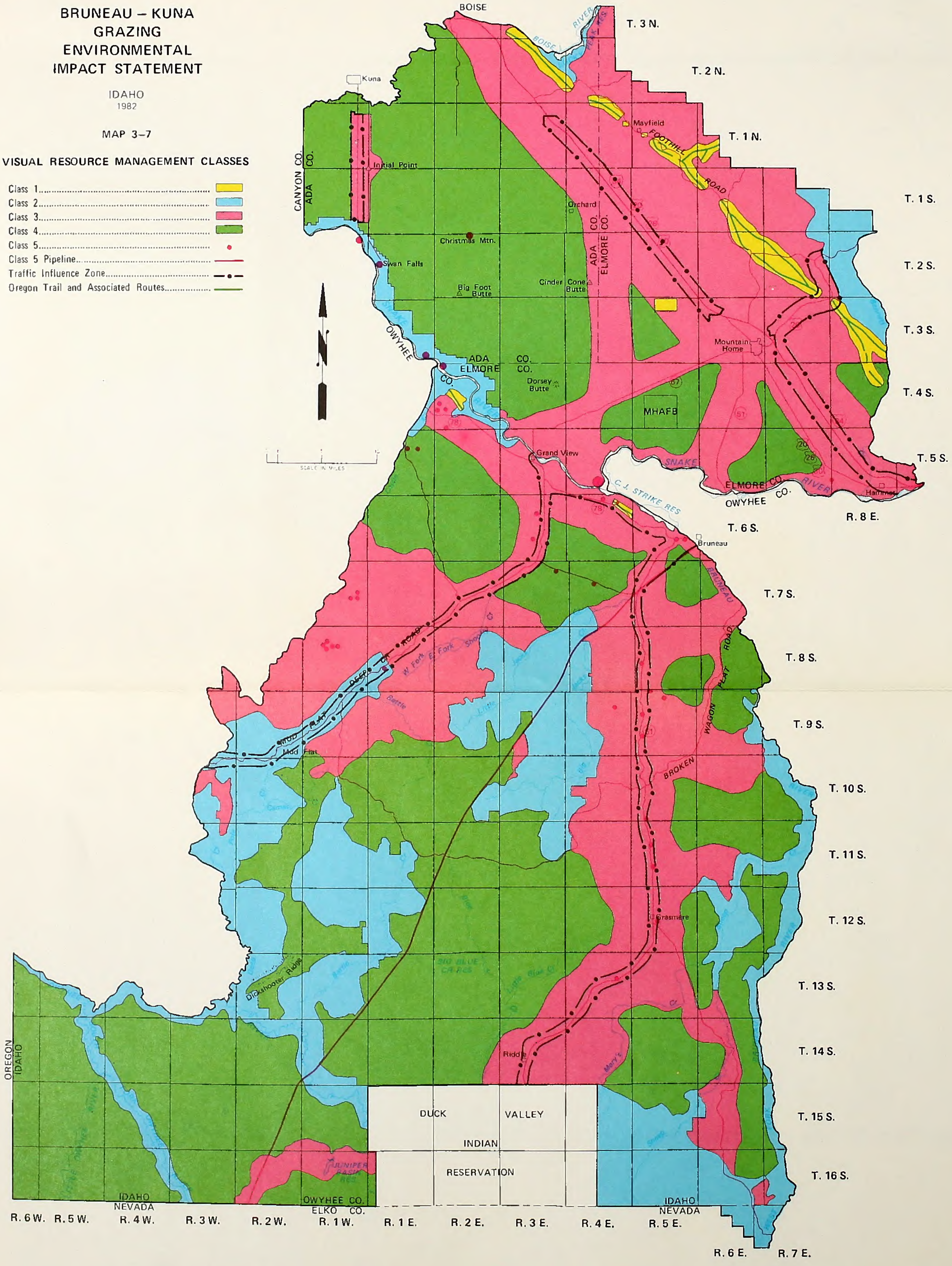
MAP 3–7

## VISUAL RESOURCE MANAGEMENT CLASSES

| | |
|---|---|
| Class 1 | 🟨 |
| Class 2 | 🟦 |
| Class 3 | 🟥 |
| Class 4 | 🟩 |
| Class 5 | ● |
| Class 5 Pipeline | — |
| Traffic Influence Zone | —•— |
| Oregon Trail and Associated Routes | — |



# BRUNEAU – KUNA GRAZING ENVIRONMENTAL IMPACT STATEMENT

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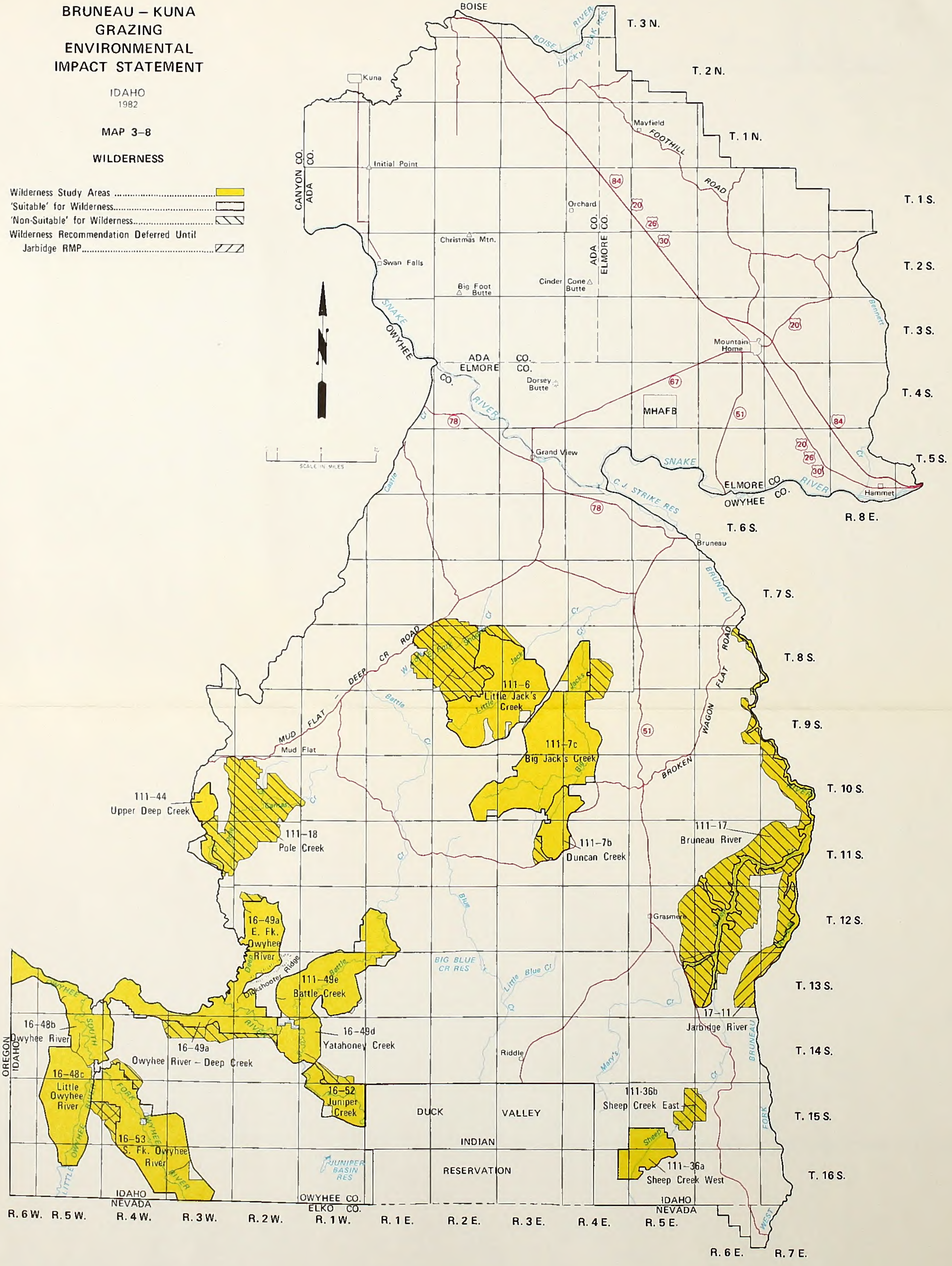
## MAP 3–8

## WILDERNESS

| | |
|---|---|
| Wilderness Study Areas | 🟨 |
| 'Suitable' for Wilderness | ☐ |
| 'Non-Suitable' for Wilderness | ▨ |
| Wilderness Recommendation Deferred Until Jarbidge RMP | ▨ |



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